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Horace G. Wadlin,

Chief of Bureau of Statistics of Labor.

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THE

ANNUAL STATISTICS

OF

MANUFACTURES.

1900.

FIFTEENTH REPORT.

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Commonwealth of Massachusetts.

Bureau of Statistics of Labor,
Rooms 250-258 State House,
Boston, July 15, 1901.

To the Honorable Senate and House of Representatives:

I have the honor to transmit, herewith, the Annual Statistics of Manufactures for the year 1900, which have been collected and are presented in compliance with Chapter 174, Acts of 1886.

I desire to acknowledge the efficient assistance of Mr. Frank H. Drown, Second Clerk of the Bureau, who, as in previous years, continues in immediate charge of the Division of Manufactures, entrusted with the collection of material and its preparation for publication in this report, and also to thank Mr. Charles F. Pidgin, First Clerk, for his valuable services in an executive capacity.

Very respectfully,

HORACE G. WADLIN,
Chief.

APR 7 - 1939 Gift

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PART I.

INDUSTRIAL CHRONOLOGY.

1900.

PART I.

INDUSTRIAL CHRONOLOGY—1900.

Abington. In January, Lilliputian Shoe Co.'s plant damaged by fire; in July, work of remodelling begun. *June.* Henry A. Owen, suspenders, removed to Boston and changed firm name to Hall & Owen. *July.* King Bros.' shoe factory destroyed by fire. *August.* Puritan Manufacturing Co. of Boston leased the old Buffum factory in this town and fitted it for manufacturing shoe machinery findings. *December.* Geo. J. J. Clark & Co., house finish, sold to Edward Billings.—— *During the year,* A. C. Woodward built an addition, 2 stories, 80 x 46 feet, and installed new looms.

Acton. In October, fire destroyed two buildings of the cider plant of Henry Barker & Co.

Acushnet. In the early part of year, boat-building shop of Eben F. & Chas. F. Leonard destroyed by fire.

Adams. In January, Renfrew Manufacturing Co. shut down on account of accident to machinery. *February.* No. 4 mill of Berkshire Cotton Manufacturing Co. and lower mill of Renfrew Manufacturing Co. damaged by high water; work suspended temporarily. *March.* Work resumed at the Adams Marble Quarry. *June.* Berkshire Cotton Manufacturing Co. added new machinery; in July, installed telephones in every room in the mills to connect with main office; later, shut down for annual repairs, and replaced the wooden flume which connected Mills 1 and 3 with an iron one. *August.* Renfrew Manufacturing Co. sunk a number of artesian wells in preparation to the concentration of its bleaching work at Renfrew village. *September.* James Renfrew of the Renfrew Manufacturing Co., died, aged 60 years. *October.* Renfrew Manufacturing Co. shut down owing to an accident to engine.—— Foundry of James Hunter Machine Co. shut down and work transferred to North Adams. *November.* Greylock Shirt Co. shut down temporarily.—— Berkshire Cotton Manufacturing Co. ran several looms weaving silk as an experiment. *December.* Wood-turning shop of Frank G. Higgins, builder, and harness shop of Robert Christy destroyed by fire.

Agawam. In May, work begun by Edson W. Lindsey in the Porter distillery which had been shut down since June, 1899. *July.* Agawam Co., woollens, shut down for vacation.

Amesbury. In January, the Carriage Machine Co. moved into larger quarters.—— Briggs Car Works increased capacity. *March.* Scott Grain Co. incorporated, to succeed Adam Scott, under Massachusetts laws. *June.* Merrimac Hat Co. began manufacture of hats for women in addition to the regular product of men's hats; in August, shut down for repairs. *August.* Chas. D. Pecker, shoes, retired from business; no successor. *September.* Miller Bros., carriages, moved into larger quarters. *October.* Fox, Feuerherm, & Mentz purchased buildings formerly occupied by Essex Leather Co. and began the manufacture of shoe tips, and carriage, trunk, furniture, and other grades of leather. —— Hamilton Woollen Co. replaced wooden water wheel with one of steel.—— Lockwood & Brown discontinued manufacture of carriage wheels and were succeeded by Carr, Prescott, & Co.; old firm started in business later putting on rubber tires.

Andover. In February, Newton Jaquith, shoes, retired from business; no successor. *March.* The Tyer Rubber Co. let contract for new brick factory, 112 x 176 feet, 4 stories; completed in December. *November.* Plant of Bay State Brick Co. absorbed by New England Brick Co.

Ashburnham. In January, Alfred H. Whiting & Co. began erection of chair factory, 50 x 150 feet, 4 stories; completed and dedicated in March.—— W. F. Whitney, chairs, shut down for two weeks.

Athol. In January, H. H. Rice's shoe-box factory destroyed by fire; rebuilt. *February.* L. S. Starrett, Athol Machine Co., and Athol Gas & Electric Light Co. shut down temporarily owing to high water. *March.* Athol Machine Co. shut down again owing to high water. *June.* O. J. Powers & Son, formerly of Dana and Palmer, leased building to manufacture straw hats, removing machinery, etc., from latter town. *July.* Joseph Wilcox & Co., combs, began setting up machinery in new factory. *August.* L. S. Starrett shut down for vacation of two weeks and addition of new machinery; in October, Mr. Starrett bought control of the manufacture of steel tape measures and folding rules of John Campbell of New York; the third story of the Bennett & Van Valkenburg cotton mill renovated and fitted for this new business. *October.* Chas. M. Lee's Sons, shoes, shut down for balance of the year. *December.* Woollen mill of E. E. Partridge resumed operations after a shutdown of 2 years.—Wood-turning shop of Marshall Peckham damaged by fire.

Attleborough. In January, Hebron Manufacturing Co. added new machinery. *February.* S. Nelson Carpenter, jewelry, died.—Daggett Jewelry Co., of North Attleborough, purchased machinery, tools, etc., of D. D. Codding & Co., and removed same to its North Attleborough plant. *March.* Cornell-Andrews Smelting Co. organized; in May, began erection of smelting plant of brick, 52 x 102 feet, 2 stories. *June.* James H. Sturdy, retired jewelry manufacturer, died, aged 77 years. *July.* B. K. Manufacturing Co. incorporated under the laws of Rhode Island to manufacture jewelry; authorized capital $3,000.—Horton, Angell, & Co., jewelry, shut down for two weeks' vacation.—C. M. Robbins shut down on account of the heat.—A. Bushee & Co. shut down for vacation.—James J. Horton, treasurer Bay State Optical Co., died. *August.* Oscar M. Draper, jewelry manufacturer, died, aged 58 years.—Chas. M. Robbins Co. incorporated to succeed to business of C. M. Robbins. *September.* Myers & McNary, jewelry, sold to P. J. Cummings & Co. *October.* Upper part of Hebron Manufacturing Co.'s brick storehouse at Hebronville destroyed by fire. *December.* Foundation started for factory, 45 x 100 feet, 4 stories, for H. W. Williams & Co., manufacturers of jewelers' stock.—Hebron Manufacturing Co. at work on addition to Hebronville plant.—Bay State Optical Co. incorporated to succeed to business of firm bearing same name.—During the year, James Orr built addition to dyehouse and installed new yarn dyer.

Auburn. In March, Otis N. Pond, retired woollen goods manufacturer, died, aged 82 years. *May.* Shoddy mill of James Hilton destroyed by fire; rebuilt. *November.* Plant of the Stoneville Worsted Co. sold at auction.

Avon. In January, Ira May, harness manufacturer, died, aged 93 years; he began business in 1828, manufacturing boots in the old-fashioned way, but gave it up and went into the manufacture of harness, continuing in this business until within a few years. *August.* L. G. Littlefield, shoes, shut down for one week, and again in September for the same period of time; in December, shut down on account of accident to machinery. *October.* The machinery at McCarthy's cider mill renovated so that the pressing could be done by steam power instead of hand power as formerly used.

Ayer. Blank book factory of Wm. M. Sargent, idle during entire year.

Barre. In May, Francis Willey & Co., of Boston, purchased the mill village variously known as Crossleyville, Dennyville, and South Barre, and made preparations for erection of new mill 300 feet long for manufacture of worsted tops.—White Bros. began manufacturing in plant of J. E. Smith in Smithville, which they purchased in October, 1899.

Becket. In June, machinery in abandoned Westfield Braid Co.'s mill moved to new plant in Westfield; later, M. E. Ballou & Son purchased the property to use in connection with their other works for the manufacture of baskets.

Belchertown. In August, the combination sawmill of Pratt Bros. destroyed by fire.

Bellingham. In February, work begun on foundation for new engine at Caryville Mills; in September, mills shut down to permit the installation of an electric plant.

Belmont. In November, New England Brick Co. absorbed plant of Bray Bros. & Co.

Bernardston. In January, C. S. Barber's saw and grist mill, which was burned in July, 1899, rebuilt and placed in operation. *July.* E. S. Hulbert & Co., cutlery, shut down two weeks for repairs.

BEVERLY. In January, L. P. Baker, shoes, discontinued and entered firm of J. H. Baker & Co. — C. H. Woodbury & Co., soda water and bottling, dissolved, and business sold at auction. — Frank Woodbury, shoes, shut down for 2 months. — Friend-Copp Co., boxes, succeeded by A. W. Copp & Co. *March.* Millett, Woodbury, & Co., shoes, changed over machinery. *April.* Beverly Engine & Machine Co. changed from private firm to corporation; authorized capital $200,000. — Hall & Moses and Dustin Bros. started manufacture of shoes. *May.* Wm. F. Burns, leather, retired from business; no successor. — Putnam & Pope's lumber mill damaged by fire. *June.* J. A. Wallis & Sons, shoes, dissolved; F. A. Seavey & Co. succeeded. *July.* John Wilson, shoes, retired from business; no successor. *September.* Stephen B. Bray, retired shoe manufacturer, died, aged 67 years. *October.* The Upton Machine Co. of New York leased the vacant B. E. Cole factory for manufacture of automobile gearing and supplies.

Billerica. In February, main shaft at the new Talbot Mills broke causing shutdown for several days. — American Woollen Co. changed name of Faulkner Mills to Bay State Mills. *April.* Julian Talbot, retired chemical manufacturer, died. *June.* Works of Talbot Dyewood & Chemical Co. damaged by fire; in August, rebuilt. *September.* Water main at Bay State Mills burst and damaged stock and machinery; later, weave room shut down one week to allow finishing room to catch up; in October, shut down for repairs. — *During the year,* Talbot Mills built addition to weave and picker house; new dyehouse, 150 x 62 feet; new storehouse, 200 x 60 feet, and added new cards and looms.

Blackstone. In February, new looms added to Saranac Mills. — High water caused shutdown at Saranac Mills and Lawrence Felting Co. — Plant of East Blackstone Spinning & Dyeing Co. purchased by Alfred H. Lange; in August, plant sold to F. J. Gobeille for manufacture of woollen yarn; in November, plant again sold, this time to George Girard. *April.* New folder put on clearing machine in finishing department of the Saranac Mills. *July.* Saranac Mills shut down one week for vacation. *October.* Two new boilers installed in plant of Lawrence Felting Co. *December.* Saranac Mills shut down on account of scarcity of warps.

BOSTON. In January, Benjamin W. Dunklee died, aged 78 years; he was at one time proprietor and manager of the Wakefield foundry. — A building, for occupancy by Williamson & Sleeper, straw goods, 60 x 90 feet, six stories, begun; completed and occupied in May. — Bailey Manufacturing Co., perfumes, gave up manufacturing and disbanded.

February. United Shoe Machinery Co. absorbed William Gordon Co. and Seaver Process Lasting Co. — Foundation begun for bottling plant for Continental Brewing Co., one story, 50 x 104 feet; completed in May. — John J. Birkmaier & Co., cloth sponging, succeeded by Frederick Haartz & Co. — Jacob Pfaff, president H. & J. Pfaff Brewing Co., died, aged 71 years. — Fires for month: Samuel Usher, printer; J. P. & W. H. Emond, carriages; Putnam Bed Co.; and F. P. Martin & Co., cigars.

March. The Antique Glass Factory in South Boston sold to William Hack. — Chase Manufacturing Co., refrigerators, absorbed by the Liquid Air Refrigerator & Power Co. — Work begun on new building for J. G. & B. S. Ferguson to be occupied as bakery and stable, of brick, 100 x 100 feet, 4 stories; completed in August. — Plans made for addition to plant of Walworth Manufacturing Co., 40 x 60 feet, 1½ stories; completed in October. — Rufus Hart, of Hart & Osgood, iron founders, died, aged 69 years. — Abner J. Tower, oiled clothing manufacturer, died, aged 48 years. — Fires for month: William G. Bell Co., market and store fixtures; B. R. Hill, store furnishings; Peck Bros., printers; McIndoe Bros., printers; E. J. Drisko & Co., printers; Franklin Press, printers.

April. Hub Hosiery Co. incorporated; authorized capital $10,000. — Boston Blacking Co. incorporated, succeeding private firm of same name. — Sleeper Patent Flexible Insole Co. absorbed by Peerless Machinery Co.

May. William P. Scott, boxes, retired; no successor. — Atlantic Box Manufacturing Co. sold to Samuel R. Sawyer, who continued.

June. Henry A. Owen, suspenders, moved from Abington and changed firm name to Hall & Owen; in October, sold to F. M. Hall. — American Heel Co. incorporated under Maine laws with authorized capital of $100,000, for manufacture of shoe heels under special patents both as to machinery and product. — Brown & Kelsey, furniture, discon-

tinued manufacturing; no successor.—Edison Electric Light and Power Co. began work on erection of new engine room of brick, 129 x 80 feet, 1 story; completed in December.

July. Addition to factory of Thos. G. Plant Shoe Co. started, brick, 52 x 107 feet, 6 stories.—Peerless Machinery Co. absorbed the Rapid Power Eyeletting Machine Co.—A. F. Scott, earthenware, shut down during July and August.—Benjamin F. Smith, coffins, succeeded by A. L. Eastman.—J. H. W. Huckins & Co., canned soups, sold to Potter & Wrightington.—Winthrop Thayer, president of Thayer & Co., steam boilers, died, aged 37 years.—J. S. F. Huddleston, manufacturer meteorological instruments, died, aged 82 years.—N. F. Thayer & Co., shoes, shut down one week.

August. The Massachusetts Breweries Co., organized under laws of Virginia, absorbed the following plants: American Brewing Co., Alley Brewing Co., H. & J. Pfaff, Robinson Brewing Co., Hanley & Casey, William Smith & Co., Habich & Co., Franklin Brewing Co., and Continental Brewing Co., and began business under its consolidated title August 8; authorized capital, $15,000,000.—Foundation started for addition to cigar factory of Waitt & Bond, 20 x 35 feet, 5 stories, to be used as a storehouse; completed in November.

September. J. C. Haynes & Co., banjos and mandolins, discontinued manufacturing.—H. S. Leonard & Co., wool soles, sold to Wiley & Son Co. of Hartford, Conn.

October. Work begun on new plant for Walter M. Lowney & Co., confectionery, 68 x 96 feet, 5 stories.—Star Brewing Co. began excavating for new pump house, 30 x 30 x 14 feet.—Kidder Press Co. closed plant and moved to Dover, N. H.—Dudley Feed Mills sold to Dodge & Tarbell.

November. Fire, caused by explosion of a hot water tube, slightly damaged shoe factory of Thos. G. Plant & Co.—Rosenfeld & Blackstone, hats, damaged by fire.—John Wales, treasurer, National Wire Co., died, aged 68 years.

December. Boiler works of E. Hodges & Co. damaged by fire.—Warerooms of Heywood Bros. & Wakefield Rattan Co., A. B. & E. L. Shaw, W. B. Badger, and C. W. Earnshaw destroyed by fire.—Cutter & Cutter's trunk factory damaged by fire.—Thomas Gaffield, formerly a member of Tuttle, Gaffield, & Co., having, in 1861, a plant for the manufacture of window glass at South Boston, died, aged 75 years.—W. B. Sewall, member of the Sewall-Day Cordage Co., died, aged 68 years.

During the year, Hub Hosiery Co. added new knitting machines.—Saxon Knitting Mill began manufacture of women's seamless hosiery.—Echo Knitting Co. began manufacture of infants' hose.—H. P. Wasserboehr, cigars, shut down factory entire year.—Standard Extract Co. changed from private firm to corporation under Massachusetts laws.—Owing to grade crossing work on Cambridge street, the buildings, fixtures, and stock of George H. Robinson, monuments, etc., had to be removed or raised so that it was impossible to continue work during 10 months of the year.

Braintree. In February, burned plant of Victor Metal & Foundry Co. rebuilt; in December, sold out to Victor Metals Co.—Arza B. Keith, cut shoe stock, succeeded by Arza H. Keith. *June.* New machinery set up in new addition to the Rice & Hutchins shoe factory.

Bridgewater. In July, addition to shoe factory of W. H. McElwain & Co. completed. *October.* Monarch Horse Shoe Nail Co. sold to Cosewell Horse Nail Co., of Hartford, Conn., and machinery moved. *November.* W. H. McElwain & Co., shoes, shut down for stock taking.

BROCKTON.* In January, Joyce & Fletcher, shoes, incorporated as the Joyce-Fletcher Co.—D. W. Field and J. H. Lewis, shoes, damaged by fire.

February. Packard & Field changed over product from fine goods to popular priced goods.—Arnold & Elkins dissolved partnership; business carried on by Brockton & Eureka Box Toe Co.—Preston B. Keith Shoe Co. occupied newly constructed office

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* In the Chronology for 1899, it was stated that during the month of March a strike occurred at the factory of the George E. Keith Co. and that the strikers were ordered back by the Union. This statement was based upon the published reports of the incident, but the facts were inexactly reported. There was no strike at the factory nor was one contemplated; certain of the operatives stopped work and consulted workmen in other shoe factories in relation to the price paid for certain work. The result of their investigation was referred to the employer and the employés returned to their work even before the so-called strike was reported in the local papers. There has been no strike in the factory referred to during 15 years, the proprietors making annual agreements with the employés independently of any Labor Union.

building. — Abbott L. Lowell, slippers, sold to Atherton W. Tilden. — Oliver F. Leach, retired shoe manufacturer, died, aged 68 years.

March. Clifford & Clancy began manufacture of shoes. — W. F. Nesmith Shoe Co. organized under laws of Maine; authorized capital, $50,000.

April. Excavating begun for erection of new factory, 140 x 50 feet, 5 stories, to be occupied jointly by Nelson Paper Box Co. and Empire Shoe Co. — J. E. Peckham Manufacturing Co., shanks, incorporated; authorized capital, $5,000. — C. A. Eaton Co., shoes, leased new factory for additional room. — Empire Shoe Co. added machinery for manufacture of welted shoes. — Albert W. Hayden, one of the early shoemakers of Brockton, died, aged 56 years; he began manufacturing at 18 years of age, making the shoes himself all the way through as was customary at that time.

May. T. D. Barry & Co., shoes, changed over from the Standard machines to those of the United Shoe Machinery Co. — McCarty, Sheehy, & Kendrick shut down cutting room for stock taking, and closed factory one day on account of accident to main shafting. — Field-Hazzard Co. shut down cutting and finishing rooms for stock taking. — J. W. Terhune Co.'s shoe factory shut down temporarily. — Slater & Morrill, shoes, shut down for stock taking. — Cygolf Shoe Co. incorporated with authorized capital of $20,000. — Kimball & Baker's shoe factory slightly damaged by fire. — C. A. Eaton Co. started up Factory No. 2, formerly occupied by Ware & Lincoln, newly equipped with machinery for making men's welted shoes.

June. Stockholders of the People's Co-Operative Shoe Manufacturing Co. voted to increase capital stock from $3,000 to $6,000, and re-organize. — Tripp-Lincoln Shoe Co. incorporated with authorized capital of $15,000. — W. L. Douglas Shoe Co. shut down to install new engine; stitching room shut down for two weeks. — Fire damaged shoe factory of Field-Hazzard Co. — Averill & Thayer sold rand business to Brockton Rand Co.; manufacture of cement, blacking, etc., continued.

July. J. M. O'Donnell & Co., shoes, Middleborough, moved to this city. — Snell & Atherton, shoe tools, shut down for 2 weeks. — R. B. Grover & Co., shoes, shut down for 2 weeks. — Churchill & Alden, Preston B. Keith Shoe Co., and Brockton Co-operative Shoe Co., started up on season's run. — Mawhinney Last Co. shut down temporarily. — Thompson Bros.' shoe factory shut down to install new boiler. — Albert B. Fullerton, an old time shoemaker, died.

August. Daniel W. Field, shoes, shut down on account of damaged engine. — Trolley Shoe Polish Co. incorporated under Maine Laws; authorized capital, $10,000. — E. L. Bonney enlarged his box factory, building an addition 30 x 76 feet. — M. F. Thomas, shoes, shut down owing to accident to machinery. — J. B. Lewis Co., shoes, shut down temporarily. — Shoe factory of Geo. G. Snow damaged by fire. — Francis M. Shaw, retired shoe manufacturer, died, aged 75 years.

September. Preston B. Keith Shoe Co. added new machinery and increased capacity. — Empire Shoe Co. occupied new factory. — Many of the shoe factories closed to allow employés to attend the Brockton Fair. — Crafts, Harrington, & Co., shoes, installed an electric light plant in factory.

October. Thompson Bros., shoes, installed electric light plant in factory, and built an addition to office. — Pioneer Shoe Co. succeeded People's Co-operative Boot & Shoe Co. — Crawford Shoe Makers sold to Leonard & Anglin who started manufacturing shoes in the No. 2 Crawford factory. — Preston B. Keith Shoe Co. shut down to install new engine. — J. B. Lewis Co. stopped manufacturing shoes. — Field-Hazzard Co. installed new engine.

November. David Eldred, cut stock, retired from business; no successor.

December. M. A. Packard Co. began foundation for addition to factory, 85 x 40 feet, 4 stories. — T. D. Barry & Co. shut down for stock taking and a general changing about of machinery. — Shaw & Bryant, shoes, succeeded by Shaw-Tannatt Co., incorporated with authorized capital of $7,000. — Standard Rubber Co. shut down temporarily pending a re-adjustment of its affairs. — Thompson Bros., shoes, damaged by fire; later, added new boiler. — Daniel W. Field, shoes, shut down one afternoon. — W. L. Douglas Shoe Co. closed various departments in turn for stock taking. — L. M. Reynolds & Co. completed new office addition to factory. — F. E. White Co. installed electric lights. — Slater & Morrill, shoes, shut down for four days' vacation. — R. B. Grover & Co., shoes, shut down temporarily; later, shut down for stock taking. — Churchill & Alden shut down for stock taking. — Thurber & Wade, blacking, dissolved; Zimri Thurber continued under old name.

Shoe shipments. The number of cases of shoes shipped during 1900, as compiled by the *Brockton Enterprise*, is presented in the following table, comparison being made with the shipments for the 5 preceding years:

Months.	1895	1896	1897	1898	1899	1900
January,	35,238	33,465	28,249	38,818	35,476	45,770
February,	37,006	36,110	37,417	38,510	41,998	48,243
March,	48,416	40,556	40,038	46,576	66,524	64,671
April,	42,734	42,150	49,834	57,015	46,544	44,274
May,	49,709	51,242	33,113	36,218	40,378	37,958
June,	37,370	31,681	24,991	29,041	40,254	35,122
July,	28,914	30,455	30,383	38,672	31,732	27,623
August,	43,056	33,100	39,265	43,187	45,944	52,447
September,	35,073	40,029	41,033	56,121	62,563	45,607
October,	30,915	43,787	45,678	31,299	43,170	44,057
November,	35,805	28,850	37,637	39,748	37,168	46,343
December,	20,527	22,950	34,112	36,769	37,526	33,918
Totals,	444,763	434,375	441,750	491,974	529,277	526,033

The decrease in 1900 as compared with 1899 was 3,244 cases, or 0.61 per cent. On the basis of 22 pairs of shoes to a case, there were shipped during 1900, 11,572,726 pairs as against 11,644,094 pairs in 1899.

Brookfield. In March, new building for the Esther Mills, operated by E. Gibson, completed. *April.* Billings Mann, of Mann & Stevens Woollen Co., died. — Alvin Hyde, box manufacturer, died; business continued by D. G. Tucker. *June.* Chas. H. Moulton & Co., shoes, shut down for two weeks. *August.* Two new sets of cards installed in Otsego Mills. *September.* New race way built at the Mann & Stevens Woollen Co.'s mill; new looms added, also. *October.* Vacant Clancy shoe factory sold for $4,000. *November.* Chas. H. Moulton & Co. shut down cutting room temporarily; in December, shut down for three days.

Brookline. In May, work started on addition to factory of Holtzer Electric Co.; completed in September. *October.* Work begun on addition to carriage factory of M. W. Quinlan; completed in December; in November, harness shop damaged by fire.

CAMBRIDGE. In February, American Rubber Co. shut down for 10 days. *March.* New England Spring Bed Co.; Dixon & Fallis, patterns; Cornelius Houghton, piano sharps; and Brandson, Scribner, & Brophy, mantels, damaged by fire. *April.* Chas. E. Hall began work on new marble shop, 80 x 90 x 250 feet, one story; completed in July. — *May.* Reversible Collar Co. began addition to factory, 35 x 97 feet, 4 stories. — Columbia Jewelry Co. began foundation for new factory, 25 x 43 feet, one story. *September.* American Net & Twine Co. began addition to factory. *November.* The New England Brick Co. absorbed brick yards in Cambridge, Belmont, Concord, Andover, and Medford, aggregating about 350 acres. Included in the transfer was most of the realty of the Bay State Brick Co. in Cambridge, Medford, Concord, and Andover; 21 acres of Bray Bros. & Co., Belmont; 11 acres of John Gerry, and plant of N. M. Cofran & Co., Cambridge. — Geo. F. Blake Manufacturing Co. began foundation for brass foundry, one story, 160 x 80 feet.

Canton. In January, Draper Bros. Co., hosiery, began addition to factory, 3 stories, 50 x 60 feet. *February.* Revere Copper Co. merged into Taunton-New Bedford Copper Co.; in May, conveyed to New Bedford Copper Co. 32 lots of land in this town and in Sharon. *September.* Union Bleaching & Finishing Co., a re-organization of the old Canton Bleachery, filed articles of incorporation under New Hampshire laws; authorized capital, $150,000.

Charlemont. In January, Frary Manufacturing Co. shut down on account of low water. *December.* W. Goodnow put new wheel into his sawmill plant.

Charlton. In February, C. W. Pike put his satinet mill in operation. *March.* George Fitzgerald began operations in mill formerly owned by J. O. Copp.

CHELSEA. In April, still exploded in factory of Cabot Lampblack Co. causing considerable damage. —— Boston Blacking Co. incorporated and began manufacturing, succeeding private firm of same name. *June.* Cropley Shoe Co. succeeded to business of A. S. Rogers Shoe Co.; authorized capital, $50,000. *August.* Plant of Thomas Strahan & Co. reverted to them owing to failure of National Wall Paper Co. *November.* Atwood & McManus, boxes, began on storehouse, 3 stories, 40 x 447 feet.

Cheshire. In March, A. S. Farnum & Bros. purchased sawmill and lumber business of Canedy & Carpenter of North Adams.

Chester. In August, W. N. Flynt Granite Co. leased Bowe Granite Co.'s sheds and started stone cutters. *November.* Hampden Emery & Corundum Co. made repairs.

CHICOPEE. In January, the mills were generally shut down at various times on account of low water. —— Overman Wheel Co. sold to J. Stevens Arms & Tool Co. *February.* Machinery of Consumers Brewery sold to a Pennsylvania concern by the Springfield Breweries Co. —— Work begun on machine shop, one story, 200 x 400 feet, for Coburn Trolley Track Co. of Holyoke. *March.* Dwight Manufacturing Co. added new looms; others added in July. —— J. Stevens Arms & Tool Co. shut down owing to accident to machinery; in June, equipped plant with smoke consumers. *May.* Chicopee Manufacturing Co. began foundation for new mill, 4 stories, 120 x 220 feet; completed in December. —— A new brick structure begun for Hampden Bleachery, replacing old buildings torn down; entirely new machinery to bleach and dye sheeting installed. *June.* Fisk Rubber Co. shut down indefinitely. —— Page & Storms Drop Forging Co. began operations in portion of plant of the Overman Wheel Co. —— Lamb Knitting Machine Co. incorporated with authorized capital of $40,000 to manufacture the Lamb knitting machines. —— Samuel W. Parshley, retired hat manufacturer, died, aged 77 years. *September.* Chicopee Manufacturing Co. shut down on account of low water.

Tax abatement. The report of the special commissioner in the tax-abatement case of the Overman Wheel Co. against the city of Chicopee was given publicity in December. The company petitioned for an abatement of the taxes assessed against it for the years 1898 and 1899, alleging that the Chicopee assessors had largely overvalued the plant and machinery. There were two petitions, one for each year, and two distinct reports were made, although they were in many respects identical. The report for the year 1899 said that the commissioner found that on May 1 of that year the plant was being used for the manufacture of bicycles. The assessors' valuation for that year was as follows:

Stock in trade, $100,000; machinery, including engines and boilers, $140,000; four horses, $300; buildings, $176,750; land, $9,300; total, $426,350.

The commissioner held that the fair cash value of the property on that date was as follows: Stock in trade, $100,000; machinery, including engines and boilers, $123,000; four horses, $300; buildings, $160,000; land, $9,300; total, $392,600.

One of the principal questions argued at the hearing in the case was the value of certain machinery claimed to have become antiquated and useless through the advance in the methods of bicycle making. The commissioner said of this: "I find that changes in the making of bicycles in this country and in the construction of bicycles by which the cost of making was lessened to such an extent that its bicycles could not be manufactured economically with the machinery contained in the plant. This fact made it difficult to compete with bicycles made elsewhere by more modern methods. The changes consisted largely in the substitution of sheet metal work and connections for forged work and connections, and the substitution of wooden rims for metal rims. These changes rendered some of the machines of little or no value for the purpose of making bicycles. Among the machines so affected are many of the automatic and hand-screw machines, the forging machines and the machinery for making metal rims, also some trimmers, dies, presses, nipple machines and profiling machines. The machinery for making steel balls could not be used to make balls as cheaply as balls could be purchased elsewhere. Much of the machinery could be sold for second-hand machinery to greater advantage than it could be used for making bicycles, but some of it, being constructed for the especial purpose for which it was designed, could be used for no other, and was of little or no value except for the value of the metal it contained. This is particularly true of the machinery for making steel balls. These changes have lessened the value of the machines referred to and have lessened the value of the total machinery in the establishment as part of a going plant."

The attorney for the city asked the commissioner to make the following rulings:

(1.) Evidence is not admissible on the question of valuation of property for purposes of taxation to show that the business in which the property is used is being run at a loss and cannot be run profitably.

(2.) Evidence is not admissible on the question of valuation of property for purposes of taxation to show that certain machines cannot be used advantageously or profitably in the prosecution of the particular business for which they were originally purchased, because of changes in the method of manufacturing the articles for which the plant is being carried on.

(3.) Evidence is not admissible on the question of the valuation of property for the purposes of taxation to show that certain machines cannot be used advantageously or profitably in the prosecution of the particular business for which they were purchased because of later styles and improvements in such machines.

The commissioner said of these reqnests: "I cannot make any of these rulings in the form stated and rule that the value of the machinery comprised in a manufacturing plant may be affected by the fact that the plant cannot be run profitably, because of changes of method of manufacturing the articles for which the plant is being carried on, throughout the country in competing establishments, or because of later styles and improvements in the machinery used in such competing establishments, by which a large portion of the machinery cannot be used advantageously or profitably, and that by reason of said change of method and later styles and improvements the cost of such articles is decreased in other establishments to such an extent that the plant in question cannot produce the articles at a price which will enable the concern to sell at a profit. Or, in other words, the value of a machine or a lot of machinery may be affected by the fact that by the cheapening of the cost of like articles made in competing establishments by later inventions, styles or improvements, the machines or machinery cannot produce the articles at a price which will allow the owner to sell them at a profit. These things would tend to reduce the value of the machines or machinery, unless they could be used by the owners profitably for other purposes, or sold at the price they would be worth if such cheapening of method and cost had not taken place."

The report on the petition for abatement of the tax of 1898 contained the same rulings, etc., but the figures were different. The assessors valued the machinery at $125,000 and the buildings at $176,750 in that year. The commissioner reported that the fair cash value May 1, 1898, was $162,500 for the buildings and $111,000 for the machinery. This report was of interest, as being the first of the reports in tax cases of this sort brought in Western Massachusetts in recent years.

Clarksburg. In March, Strong, Hewat, & Co. added new looms.

Clinton. In January, Lancaster Mills were damaged by fire. *February.* Bigelow Carpet Co. and Lancaster Mills shut down on account of high water; shut down again in March from same cause. *March.* Clinton Worsted Co. began erection of addition to mill, 3 stories, 35 x 85 feet; completed in May. *April.* Hayes Loom Harness Co. retired from business and machinery moved to Woonsocket, R. I. *July.* All departments of Bigelow Carpet Co., except weaving, shut down for from 2 to 6 weeks. *September.* Lancaster Mills installed 7 electric motors for supplying power hitherto developed by water or steam; among the many advantages claimed for the new system was the dispensing with all belts over 10 inches wide; with gears which were all the time breaking; with heavy shafting, expensive and hard to set up, and offsetting same with the gain in cleanliness, steadiness of power, and many other advantages. *November.* Clinton Binding Co. succeeded by Thomas S. Davis. *December.* Clinton Worsted Co. added new combers and other machinery.

Concord. In September, Concord Rubber Co. added new boilers and enlarged plant. *November.* Brick yards of Bay State Brick Co. absorbed by the New England Brick Co.

Conway. In February, Darby & Moore, duck suits, made arrangements to move here from North Adams; certain public spirited citizens created a fund (completed in March) and secured this concern to occupy a hitherto vacant plant; in June, started up.

Cummington. In November, A. H. Allen & Co. added manufacture of barrels.

Dalton. In February, the Centennial Mill shut down on account of high water. *June.* All the paper mills in town shut down on account of the building of a new bulkhead at the woollen mill. *July.* Bay State Mill shut down 2 weeks for repairs; in October, shut down owing to accident to engine.—Byron Weston Co. shut down for repairs and the addition of 2 new beaters. *August.* Charles O. Brown, formerly of the firm of

Carson & Brown operating the Old Berkshire Mills, died at San Diego, Cal., aged 73 years. *September.* Andrew & Reddick, woollens, installed new set of cards. *November.* Renfrew Manufacturing Co., cotton goods, installed new engine. *During the year,* Zenas Crane repaired the dam, and improved and painted the tenement houses at the Kittredge Mill property. —— Z. & W. M. Crane remodeled their mill office. —— Renfrew Manufacturing Co. put in new gateways at the head of the pond, enlarged boiler house, and added new boiler and other machinery. —— Crane & Co. built new dam at the Pioneer Mill.

Dana. In February, work generally suspended at the different mills on account of high water. *October.* Plant of Crawford & Tyler, woollens, which had been shut down for repairs, resumed operations.

Danvers. In February, the Consolidated Electric Lamp Co. incorporated; authorized capital, $100,000. *March.* Massachusetts Glove Co. moved to Salem. *April.* American Goat Skin Co., associated with Downing-Perkins Co., began manufacture of enameled leather. —— Martin Kelley & Co., shoes, started up. *May.* C. C. Farwell & Co., leather, shut down for stock taking. —— Simpson & Ferguson started construction of new cider mill. *June.* Mrs. Geo. M. Morse, who had been working in various capacities in shoe factories for several years, started a small factory of her own. *July.* G. Plummer & Co., tanners, dissolved; Charles P. Kerans continued. —— Ira P. Pope, shoe manufacturer, died, aged 77 years; he started in business in 1845. *August.* Clapp & Tapley, shoes, closed for vacation. *October.* The old White shoe factory at Putnamville torn down and timber used for building tenement houses; the removal of this factory marked the close of the once great shoe business in that section of the town, which was for years the busiest portion of Danvers. —— George Plummer of G. Plummer & Co., leather, died, aged 60 years. —— Chas. H. Gould, an old time shoemaker, died, aged 80 years; when shoe machinery was generally introduced, Mr. Gould, being beyond the most active period of life, retired from business. *December.* Plant of Edward Carr, bricks, idle during entire year. —— Donovan & Shea, shoes, shut down for 2 weeks. —— Eaton & Armitage, shoes, moved into their new factory. —— Colcord & Walcott's shoe factory destroyed by fire.

Dedham. In June, Cochrane Manufacturing Co. began construction of new weaving plant, 2 stories, 148 x 60 feet. *November.* Merchants Woollen Co. shut down for indefinite period on account of lack of orders.

Deerfield. In October, Arms Manufacturing Co., pocketbooks, installed acetylene gas plant.

Dighton. In January, Century Stove Foundry Co. destroyed by fire; the plant was originally erected in 1883 by the Groveland Stove Co., and consisted of a main building of 2½ stories, 50 x 100 feet, and a molding shed of somewhat larger dimensions; the property did not prove a paying investment. After lying idle for several years, it was purchased, in 1892, by the present owners. *February.* Anchor Color Works shut down temporarily; in August, shut down indefinitely.

Douglas. In October, hatchet shop of American Axe & Tool Co. damaged by fire.

Dracut. In January, new slasher machine added to the Collins Mill plant of the American Woollen Co.; in February, shut down on account of high water; in April, storehouse and picker rooms destroyed by fire; in May, work of rebuilding begun; in July, rebuilding completed and plant increased from 18 to 39 sets of cards and from 105 to 168 looms; in September, foundation laid for an addition, 3 stories, 95 x 65 feet. *July.* Main building of Whitman Rendering Works destroyed by fire. *August.* Dyehouse of Merrimac Woollen Mills destroyed by fire; in November picker room shut down for lack of material. *October.* M. L. Bassett & Co., paper, started plant after a shutdown of several months; in December, shut down four departments for one week.

Dudley. In April, Stevens Linen Works began on addition for card room, and made repairs. *June.* Josiah Perry installed new looms and new boilers.

East Bridgewater. In March, Henry Hobart, retired tack manufacturer, died, aged 76 years; as a young man Mr. Hobart became interested in machinery; he learned the

tack business of B. Hobart & Son, and when the firm of Dunbar & Hobart was formed in 1857, he became the junior partner, and afterward the firm name was changed to Dunbar, Hobart, & Whidden; the plant was enlarged, its manufactured products were shipped to all parts of the world and it became one of the best known firms in the country. On the death of Mr. Whidden, the firm name was changed to Dunbar, Hobart, & Co., and Mr. Hobart's eldest son became a partner, as well as Joseph Pettee, Jr., now of Fairhaven. The business was purchased by the Atlas Tack Corporation, and continued up to the time of their failure, since which time the large factory has been idle. *June.* J. D. Jones, boxes, succeeded by Mackie Bros. *October.* Work suspended at Hathaway Box Co. for purpose of setting up new machine.

Easthampton. In January, the Hampton Co., incorporated with authorized capital of $60,000. *March.* Work begun on addition to Nashawannuck Co.'s finishing department, 60 x 55 feet. *April.* Easthampton Foundry Co. leased plant and started general foundry business. —— Hampton Co. began foundation for new mill, 4 stories, 275 x 60 feet. —— Machinery of Ionic Knitting Co. removed to Henderson, N. C. *July.* Nashawannuck Co. added new boiler. —— Foundation laid for new mill for Glendale Elastic Fabrics Co. *October.* Nashawannuck Co. shut down on account of low water; during the year, the company nearly doubled its finishing department by the construction of a large addition.

Easton. In April, Eclipse Automobile Co. began manufacturing. *July.* Hatch & Grinnell shut down for repairs. —— Oliver Ames & Sons Corporation shut down owing to the extreme heat.

Egremont. In May, Chester-Goodale Marble Co. began operations in its quarry. *September.* Dalzell's axle factory damaged by fire.

Enfield. In April, D. E. Tebo & Co. incorporated under Massachusetts laws, as the Enfield Manufacturing Co.; authorized capital, $10,000. *August.* Swift River Co. made repairs on dam, headgate, and sluice way; in October, shut down on account of lack of work.

Erving. In January, Washburn, Eddy, & Co., building material, closed business; no successor. *July.* Millers Falls Co. shut down for vacation; in September, shut down for repairs; in November, moved into new addition. *December.* Washburn & Heywood Chair Co. shut down one week for stock taking. —— H. L. Pratt, first president of the Millers Falls Co., died at Brooklyn, N. Y., aged 74 years.

EVERETT. In January, the Boston Varnish Co. completed its addition to plant. *February.* United States Steel Co. acquired site for establishment of steel plant, 120 x 200 feet; in April, started on electric power plant and dock; in July, started on main plant; in September, completed. *March.* Property of Everett Distilling Co. bought by Andrew J. Mahoney. *December.* Prince-Collins Co. began manufacture of shoes.

Fairhaven. In February, Atlas Tack Co. shut down temporarily.

FALL RIVER. In January, Stevens Manufacturing Co. added a number of ring spinning frames. —— Fall River Manufactory put in new engine shaft. —— The machinery in idle Jesse Eddy plant of American Woollen Co. shipped to Dexter, Maine. —— James Marshall fitted up his Shaw Street plant as a fur shoddy manufactory for the purpose of covering, filling, and surfacing all grades of hats by a new process. —— Shutdowns for month: King Philip, 15 minutes on account of accident, and one day on account of accident; Conanicut Mills, carding and shipping departments, one week on account of accident; Troy Mills, 45 minutes on account of accident. —— Fires for month: Pocasset Mill, picker room, and Hargraves Mill, mule room.

February. Kerr Thread Mill shut down temporarily owing to accident to machinery. —— Fall River Bleachery Co. organized; authorized capital, $600,000. —— Hargraves Mill fined $50 for alleged violation of 58-hour law. —— Fall River Iron Works Co. and Chace Mills shut down on account of accidents to machinery. —— Work begun on new weave shed, one story, 160 x 50 feet, for Granite Mills. —— A. F. Lamontagne, baker, sold to Theophile Lafond.

March. Heywood Narrow Fabric Co. incorporated; authorized capital, $27,500; succeeding private firm of M. Heywood & Co. taking effect April 1.——King Philip and Richard Borden Mills substituted ring frames for mules.——The following mills added new machinery: Pocasset, Arkwright, Fall River Manufactory, Mechanics, Osborn, Wampanoag, Robeson, Conanicut, American Linen, Hargraves, Kerr Thread, Union, and Chace.——The following mills shut down temporarily owing to accidents to machinery: Shove No. 1, Wampanoag No. 1, and Sagamore No. 2.

April. American Thread Co. began work on addition to mill, one story, 100 x 60 feet; completed in June.——American Printing Co. shut down a portion of plant on account of accident to machinery; later, entire plant shut down.——Conanicut mill started on new storehouse and additions to mill, 44 x 48 feet, and 29 x 71 feet; later, added new spinning frames.——Fall River Iron Works Co. shut down No. 4 mill owing to break in shafting; later, shut down again from same trouble.——Hargraves Mill No. 2 shut down on account of accident.——King Philip Mills added new spinning frames to No. 1 mill.——Mechanics Mills shut down owing to breaking of piston rod of large engine.——Stockholders of Osborn Mills voted to increase capital stock from $600,000 to $750,000, and the number of shares from 6,000 to 7,500.——Richard Borden Manufacturing Co. substituted spinning frames for mules in No. 1 mill.——Sagamore Mills stopped about 160 looms on account of shortage of warps.——Shove Mills added new speeder frames to No. 1 mill.——Stafford Mills started on new weave shed, 153 x 156 feet; completed in November.——Heywood Narrow Fabric Co. shut down on account of the prevalence of grip among operatives.——The balance of old machinery at the Jesse Eddy Mill shipped to Rhode Island.——Globe Yarn Co. shipped old spinning frames to one of the mills of the New England Cotton Yarn Co. in New Bedford.——Chester S. Belcher started in the manufacture and repairing of automobiles.

May. Stockholders of the Hargraves and Parker Mills voted in favor of combining the two corporations.——King Philip Mills shut down on account of accident to machinery.——Massasoit Mills damaged by fire.——Merchants Mills substituted ring spinning frames for mules; later, added new machinery in carding department.——Shove Mills shut down No. 1 mill temporarily on account of accident to engine.——Stockholders of Union Cotton Manufacturing Co. voted to increase capital stock from $750,000 to $1,200,000.——James Holden, cotton banding, added machinery for manufacture of cotton yarn.

June. American Linen Co., Merchants Mills, Stafford Mills, Globe Yarn Mills, Hargraves Mills, and Kerr Thread Co., added new machinery during the month.——Parker Mills shut down for 4 days on account of accident to machinery.——Tecumseh Mill No. 2 struck and slightly damaged by lightning.——Troy Cotton & Woollen Manufactory shut down on account of accident to machinery.——Thomas Redfern & Son established workshop for manufacture of spinning frame pressers, etc.

July. By mutual agreement a number of mills shut down during the month. The form of agreement for shutting down the mills to curtail production covered the period from July 9 to September 17, inclusive. The treasurers signing the agreement were free to shut down their mills during any 4 weeks within that period. The form of agreement differed from the usual form of the sort, since it did not make the curtailment dependent upon any fixed number of spindles being joined to the agreement. The mills closing down this month were as follows: American Linen, Barnard, Chace, Cornell, Crescent, Davol, Durfee, Fall River, Granite, Laurel Lake, Merchants, Metacomet, Pocasset, Richard Borden, Robeson, Sagamore, Seaconnet, Shove, Slade, Stafford, Troy, Union, Wampanoag, and Weetamoe.—— Union Belt Co. and Globe Yarn Mill No. 2 added new machinery.——Hargraves Mills No. 1 began changing over from print cloths to fine goods.

August. The mills which shut down in accordance with agreement were as follows: American Linen, Barnard, Border City, Chace, Cornell, Davol, Durfee, Fall River, Granite, Laurel Lake, Mechanics, Merchants, Metacomet, Narragansett, Pocasset, Richard Borden, Robeson, Sagamore, Seaconnet, Shove, Slade, Stafford, Tecumseh, Troy, Union, Wampanoag, and Weetamoe.——Algonquin Printing Co. started up partially after a 5 weeks' shutdown.——Fall River Iron Works Co.'s No. 4 Mill stopped 30 minutes owing to an accident to the engine.——Arkwright Mills stopped 50 minutes owing to an accident to the engine.——Narragansett Mills shut down on account of accident to engine.——Border City Mills equipped with new speeders in carding department.——Marine railway at shipyard of Edward F. Bealky destroyed by fire.——Sanford Spinning Co.'s mill struck and damaged by lightning.——John J. Highlands, mason, died, aged 61 years.

September. The following mills shut down to curtail production: Border City, Durfee, Fall River, Flint, Granite, Mechanics, Narragansett, Seaconnet, Shove, Slade, Stafford, Tecumseh, and Wampanoag.——No. 2 Globe Yarn Mill shut down 2½ hours owing to

accidents. —— Hargraves Soap Manufacturing Co. sold at auction. —— Fall River Iron Works Co.'s No. 4 Mill stopped 45 minutes owing to accident to engine. —— Stevens Manufacturing Co. shut down 2 weeks on account of short supply of raw cotton and prevailing high prices. —— Stafford Mills added new spinning frames and looms. —— Fire partially destroyed plant of Fall River Gas Works.

October. A supplemental season of curtailment was undertaken with fair success, the only mills, however, which took part in the movement were the Flint, Stafford, Stevens, and Mechanics. —— Arkwright Mills added new machinery. —— New England Cotton Yarn Co. began work on new storehouse at the Sanford Mills, 110 x 100 feet. —— During the year Stafford Mills paid out $113,609.27 for addition to mills, new machinery, and other betterments. —— Chace Mills added 5,184 spindles to plant during past year. —— Arkwright Mills added during the year 6,000 spindles and 600 looms. —— New England Cotton Yarn Co. re-organized and incorporated under Massachusetts laws.

November. Part of dyeing department of Kerr Thread Mills shut down for 2 months. —— Osborn Mills built addition to No. 2 mill for purpose of increasing frame spinning capacity of plant. —— Weave room of Sagamore Mills shut down temporarily. —— Wampanoag Mill No. 1 shut down temporarily on account of accident to engine. —— Crescent Hat Co. organized to operate plant formerly owned by Pocasset Hat Co. —— Wilson Bannister, soap powder manufacturer, died, aged 61 years.

December. Narragansett Mills shut down one day on account of accident to machinery. —— Barnard Mills added new wide looms. —— Fall River Iron Works Co.'s No. 2 mill shut down indefinitely owing to breaking of main driving shaft. —— Jonathan Slade died, aged 86 years; until within about a year he was president of the Slade Mills.

Print cloth statement. The opening of the year found a moderate stock of cloths on hand but with contracts in force for future delivery fully covering the stock. The price was 3¼ cents which continued in force until Feb. 19, when it was advanced to 3⅜ cents for regulars, and other grades in proportion. On March 2, the price was advanced to 3½ cents. Up to this date, the sales since the opening of the year had been fully equal to the output, but the ensuing 6 months showed a very light business, and prices were reduced on May 28 to 3⅛ cents and on June 26 to 2⅞ cents for regular goods. On July 3, the mills decided to curtail production to the extent of 1,000,000 pieces, which plan was carried out. The opening of the autumn season showed renewed business activity, and during the first six weeks there were sales exceeding 3,000,000 pieces, the price advanced to 3 and 3⅛ cents, and on October 9 to 3¼ cents, from which, on October 24, it returned to 3⅛ cents at which price it stood at the close of the year. The highest price for print cloths during the past century was 38½ cents in 1864 and the lowest 1⅞ cents in 1898; the highest price paid for raw cotton during the same period was $1.90 per pound in 1864-5 and the lowest price 4 cents per pound in 1844-5. The cotton crop for the year 1801 was 80,000 bales and the estimated crop for 1900 was 10,000,000 bales. The first cotton mill in Fall River was erected in 1813 and contained 1,500 spindles, at the close of 1900 the number of spindles in operation was 4,456,032, of which 1,329,712 were mule and 3,126,320 were frame spindles.

In the following table we reproduce the statements of production since 1890; the figures for 1888, 1889, and 1900 are estimates furnished by a member of the Manufacturers' Board of Trade:

Years.	Number of Pieces of Print Cloth				
	Produced	Sold	On Hand at close of Year	Stock in United States at close of Year	Sold for Future Delivery
1890, ...	9,937,000	8,584,000	583,000	952,000	1,540,000
1891, ...	9,985,000	8,838,000	90,000	278,000	1,375,000
1892, ...	10,045,000	10,759,000	7,000	9,000	2,850,000
1893, ...	9,065,000	7,119,000	142,000	340,000	950,000
1894, ...	8,478,000	8,331,000	140,000	211,000	1,300,000
1895, ...	11,090,000	9,871,000	287,000	464,000	1,125,000
1896, ...	10,055,000	7,819,000	1,802,000	2,300,000	1,001,000
1897, ...	10,648,000	10,470,000	1,836,000	2,390,000	1,144,000
1898, ...	11,500,000	13,332,500	4,500	500,000	1,800,000
1899, ...	12,000,000	13,500,000	–	500,000	2,000,000
1900, ...	14,000,000	11,000,000	1,500,000	2,000,000	400,000

The following table shows the variation in price of print cloth, 64 x 64, since 1890:

Years.	Prices per Yard of Print Cloth (64 x 64)		
	Highest	Lowest	Average
1890,	3.563	3.000	3.344
1891,	3.063	2.750	2.951
1892,	4.063	3.063	3.418
1893,	4.000	2.750	3.295
1894,	3.000	2.599	2.763
1895,	3.313	2.438	2.875
1896,	3.000	2.438	2.600
1897,	2.688	2.250	2.484
1898,	2.375	1.875	2.063
1899,	5.125	3.250	2.685
1900,	3.500	2.875	3.125

Falmouth. In February, work begun on factory and store, one story, 90 x 60 feet, for Crocker Cycle Co.

FITCHBURG. In January, the Glen Mill shut down temporarily owing to frozen pipes. — Simonds Manufacturing Co. began work on addition to plant, 40 x 120 feet, 2 stories; completed in June. — The Whitney Reed Chair Co.'s factory damaged by fire. *February.* The following plants shut down temporarily owing to high water: Putnam Machine Co., Parkhill Manufacturing Co., Orswell Mills, Glen Woollen Co., Beoli Mills, Fitchburg Paper Co., and Star Worsted Co. — Fire damaged machine shop of F. S. Lovell. *March.* A second flood caused the shutting down of the Fitchburg Paper Co. and Putnam Machine Co. — Glen Mill damaged by fire. *April.* Goodnow's Foundry damaged by fire. *May.* Beoli Mill shut down on account of accident to machinery. — Parkhill Manufacturing Co. began foundation for storehouse, one story, 225 x 60 feet. *July.* Beoli Mill shut down for vacation. *August.* Louis Des Johns & Co., of New York, purchased vacant Mitchell Mill, removed the textile machinery and made ready for installation of machinery for the surface coating of paper. *November.* Willard Screen Plate Co. sold entire business to Hardy & Pinder who added product to their own output. *December.* The plants of Simonds Rolling Machine Co. and Fitchburg Steel Ball Co. shut down entire year.

Foxborough. In May, the Union Straw Factory destroyed by fire; this factory was built in 1852 by a corporation headed by O. & E. P. Carpenter; at that time, there were about 17 firms engaged in the straw hat industry in the town; the building was erected to accommodate several of these firms, and was considered the largest hat factory in the country, and perhaps in the world; the plant cost about $250,000. There were, in later years, financial reverses and changes of firms, and in recent years the plant had been operated by the A. F. Bemis Co. *June.* Caton Bros. straw hat factory damaged by fire.

Framingham. In May, Dennison Manufacturing Co. began foundation for addition to plant, 2 stories, 88 x 50 feet. *October.* Cork Floor & Tile Co. sold to the Non-Pareil Cork Co. and business moved to Connecticut.

Franklin. In February, J. G. Ray, vice-president of the American Woollen Co., and the last of the four famous Rays, all woollen goods manufacturers, died, aged 69 years; in 1850, with his brother Francis, he started the first rag picker operated in this section and from this was started the first shoddy mill in New England under the name of Ray Bros., at Unionville. *April.* City Mills Co. added new boiler to plant. *June.* Charles J. McKenzie, retired manufacturer, died, aged 55 years. *July.* Ray Fabric Mill of the American Woollen Co. equipped looms with new shuttle check. *August.* American Woollen Co. began foundation for new building for finishing and picker room, 3 stories, 45 x 60 feet. — Ray Fabric Mill shut down for repairs. *October.* Enoch Waite built a

new mill which was leased by Daniel Pendergast for manufacture of shoddy and horse blankets. *November.* Singleton Worsted Co. shut down for one week. *December.* Ray Woollen Mill added new cloth dryer.

Freetown. In August, gun factory of N. R. Davis & Sons damaged by fire.

Gardner. In May, pail factory of E. G. Bradshaw damaged by fire; 9 out of 11 buildings were destroyed. *June.* Wyman & Upham, chairs, dissolved; Mr. Wyman continued. *December.* Gas house slightly damaged by fire.

Georgetown. In April, factory of Georgetown Boot & Shoe Co. shut down for repairs; later, shut down on account of accident to boiler. —— Factory of A. B. Noyes & Co. shut down for repairs; in May, shut down temporarily; in June, shut down for one week; later, shut down for 2 weeks for stock taking; in November, shut down for stock taking.

Gill. In September, mill of New England Fibre Co. shut down 2 weeks on account of low water.

GLOUCESTER. In January, smoke house of Shute & Marchant damaged by fire. *March.* Samuel R. Crane, cooper, died, aged 73 years. *September.* Meyer, Rosenfeld, & Co. of Boston leased quarters for manufacture of wrappers. *October.* Russia Cement Co. began on addition to plant, 152 x 40 feet. *December.* New box factory on George Perkins & Sons wharf put in operation.

Grafton. In February, Fisher Manufacturing Co. shut down temporarily on account of high water. —— Geo. W. Fisher, of the Fisher Manufacturing Co., died, aged 57 years. *May.* Saunders Cotton Manufacturing Co. began erection of 2 new storehouses. —— J. S. Nelson & Son Co. shut down partially for stock taking. *August.* Farnumsville Cotton Mills shut down permanently; in October, plant, including mill, water privilege, land, and 30 tenement houses, sold to Woonsocket Savings Bank for $12,000 at foreclosure sale of a mortgage for $50,000; in December the bank brought a bill in equity before the Worcester County Superior Court to restrain the former owners of the mill from disposing of or removing the machinery from the mill; the case to be heard in February, 1901.

Granville. In December, Noble & Cooley, drums, shut down for annual vacation and inventory.

Great Barrington. In February, Endrick Woollen Mill shut down on account of high water; in March, shut down on account of accident to machinery; in August, shut down one month for repairs; in December, ran out all stock and shut down indefinitely; it is said that the site of the first mill in Great Barrington was not far from the present mill which is a stone structure, erected in 1858, and operated by the Berkshire Woollen Co. for many years; the original mill was occupied about 1804 by Booth & Gibbs. *September.* Goodrich Lumber Mill shut down for repairs. *October.* Monument Mills shut down twice during the month on account of low water. *December.* Stanley Instrument Co. shut down one week for stock taking. —— Berkshire Soda Springs Co. leased soda spring on Clark's farm.

Greenfield. In March, Automatic Machine Co., organized in 1899, began operations. —— Goodell-Pratt Co began erection of addition 60 x 40 feet, 2 stories. —— Morey & Raymond, job printers, dissolved; Raymond & Manning succeeded. *May.* Massachusetts Tool Co. organized; authorized capital, $25,000; ground leased of Goodell-Pratt Co. upon which to erect a factory; in August, started machinery in new building. *June.* Wells Bros. & Co. began on addition to factory. —— Warner Manufacturing Co. shut down one week for repairs. —— Emil Weisshrod & Sons, pocketbooks, shut down one week for vacation. —— Chas. R. Field Manufacturing Co. shut down for several weeks starting up again on July 23. *August.* Geo. F. Dodge, mason builder, died, aged 70 years. *October.* Oakman Motor Vehicle Co. sold to New York parties. *November.* New England Brick Co. purchased the brick yards of Smith & Welch. *December.* Wells Bros. & Co. shut down for stock taking.

Groton. In September, paper mill of Tileston & Hollingsworth Co. shut down for repairs.

Groveland. In February, Groveland Mills shut down its No. 3 spinning room on account of accident to machinery; in July, equipped looms with new shuttle check; in November, shut down half a day to permit employés to vote; in December, shut down for holidays.

Hampden. In February, John Kenworthy added new looms for manufacture of cotton worsteds in addition to present product; new engine installed, also.

Hancock. In June, Geo. W. Barker died at Woburn; he formerly ran a cassimere mill in this town.

Hanover. In December, Clark & Bowers purchased plant from Lot Phillips & Co. and began alterations and repairs, fitting it up to manufacture fireworks.

Hardwick. In October, card and spinning rooms of Geo. H. Gilbert Manufacturing Co.'s No. 4 mill shut down on the manufacture of woollen goods and used rooms for manufacture of worsted goods.

Hatfield. During the year, C. S. Shattuck, guns, shut down 21 days on account of low water.

HAVERHILL. In January, Stewart-Potter Last Co., J. W. Russ & Co., Lennox & Briggs, and Chick Bros., increased capacity. —— O. L. Foster, slippers, moved into larger quarters. —— Fire damaged plants of T. S. Ruddock & Sons and Chas. K. Fox.

February. Thayer & Maguire shut down temporarily on account of accident to machinery. —— P. N. Wadleigh added new line of shoes to his product. —— T. L. Hill began manufacture of children's spring heel shoes, and F. M. Brown, children's and misses' shoes. —— Lang & Roberts, shoes, dissolved; E. F. Lang continued. —— Geo. F. Burnham, leather goods, moved into larger quarters. —— Factory of Thayer & Maguire damaged by fire. —— E. W. Allen, slipper manufacturer, died; business discontinued; no successor.

March. Stevens Woollen Mill and leather factory of Lennox & Briggs shut down on account of high water. —— H. L. Toppan, shoes, moved into larger quarters. —— Geo. B. Leavitt began manufacture of shoes. —— Morse & Proctor added molded counters to their product. —— Levi C. Wadleigh, retired shoe manufacturer, died, aged 85 years. —— J. F. Currier & Co., slippers, discontinued; no successor. —— W. P. Fletcher of Stoneham purchased plant of L. C. Ring for purpose of fitting it up for manufacture of cardboard.

April. J. W. Russ & Co. shut down for stock taking. —— Warren O. Hunkins began manufacturing. —— H. P. Williams, slippers, succeeded by E. B. Johnson. —— J. G. Hudson began manufacture of paste for photographers' use, shoe linings, etc. —— I. G. Sutherland & Sons, lasts, moved plant to Lynn. —— C. M. How, shoes, gave up manufacturing; continuing business as dealer only. —— Walter H. Page, shoes, discontinued; no successor.

May. F. J. Thompson, shoes, moved into larger quarters. —— Leslie K. Morse & Co., shoes, moved business to Raymond, N. H. —— W. Vernon Moulton began manufacture of cut stock. —— Arthur Prescott, shoes, went out of business; no successor; did not intend to re-engage in manufacturing, but, on further consideration, made arrangements to begin Jan. 1, 1901.

June. H. E. Guptill, shoes, moved to larger quarters. —— Prosser & Smith added new molding machine to their counter molding factory and increased capacity of plant. —— Noyes, Reed, & Co., shoes, dissolved; Mr. Noyes continued. —— Chesley & Rugg, J. H. Winchell & Co., J. W. Russ & Co., W. W. Spaulding & Co., Knipe Bros., and F. N. Livingston & Co. shut down for stock taking. —— T. M. Arnold began manufacturing cut soles. —— E. G. Morrison & Co., shoes, moved to Concord, N. H. —— Chas. H. Noyes enlarged his paper box factory. —— J. W. Proctor resumed the innersole business. —— F. N. Livingston & Co. added a department for making pasted stock. —— Geo. Ham, shoes, retired from business; no successor. —— Foster Counter Co. began manufacturing.

August. Pentucket Counter Co. moved to larger quarters. —— J. H. Winchell & Co., shoes, shut down half a day on account of accident to machinery. —— Chesley & Rugg, shoes, added new machinery. —— W. S. Adams & Son began manufacture of shoes. —— Edward O'Connell, shoe manufacturer, died. —— John T. Hayes, slipper manufacturer, died, aged 38 years; business discontinued in October.

September. Rockbottom Shoe Co. moved into larger quarters. —— Business of E. W. Bullock & Co., counters, closed out under assignment; no successor. —— Noyes, Read, & Co., slippers, dissolved; no successor.

October. Alexander Roberts & Co., men's suitings, moved entire business to Claremont, N. H. —— Marion & Bond began manufacture of wood heels. —— A. E. Arnold began manufacture of shoes. —— Chas. L. Stevens taken into partnership by Thos. M. Arnold in manufacture of cut soles. —— E. J. Burlin began manufacture of slippers. —— H. E. Adams with Warren Kimball began manufacture of shoes. —— E. F. Lang, shoes, moved to larger quarters. —— P. N. Wadleigh shut down on account of accident to machinery. —— A. J. Farrington died, aged 70 years; he was one of the oldest shoe manufacturers in the city. —— Lewis & Carleton began manufacturing cut stock.

November. Walter H. Page began manufacture of shoes based on his own patent. —— J. Irving Benedict & Son discontinued manufacturing and moved to Highwood, N. J. —— E. A. Jennings, shoes, moved into larger quarters. —— Wm. F. Chase, shoes, retired; no successor. —— Shoe factory of Geo. H. Bartlett damaged by fire; later, rebuilt.

December. Frederick W. Millay sold his interest in the Stewart-Potter Last Co. to H. F. Blake; later, he started in business for himself. —— Chas. W. Tappan Shoe Co. shut down for stock taking; announced intention to remove to Maine. —— H. B. Goodrich & Co., shoes, shut down for stock taking. —— Improved Gasolene Motor & Automobile Co. organized. —— W. B. Thom & Co., hats, shut down for stock taking. —— Geo. Henry, die cutting manufacturer, died. —— J. G. S. Little, retired shoe manufacturer, died.

Shoe shipments. The number of cases of shoes shipped during 1900, as compiled by the *Haverhill Gazette*, is given in the following table in comparison with the shipments of the 5 preceding years:

Months.	1895	1896	1897	1898	1899	1900
January,	29,857	38,709	41,190	38,931	40,514	47,078
February,	29,519	34,411	43,176	40,509	41,356	47,043
March,	47,275	36,668	44,365	54,816	54,989	58,575
April,	42,056	47,572	51,358	39,020	44,481	37,267
May,	51,276	33,361	34,939	20,200	42,894	31,017
June,	31,599	30,706	28,679	33,350	42,284	23,053
July,	20,704	29,694	29,923	24,125	27,466	17,182
August,	23,500	22,688	22,621	24,090	36,715	24,722
September,	20,856	21,617	32,638	30,966	30,604	21,427
October,	20,847	26,327	25,156	24,873	21,062	23,723
November,	25,546	21,227	25,083	25,935	39,283	31,796
December,	23,875	43,143	42,734	39,466	39,078	32,657
Totals,	366,910	386,123	421,862	396,281	460,726	395,540

The decrease in 1900 as compared with 1899 was 65,186 cases, or 14.15 per cent. On the basis of 40 pairs to a case, there were shipped in 1900, 15,821,600 pairs as against 18,429,040 pairs in 1899, and 15,851,240 pairs in 1898.

Heath. In February, the Berkshire Mining & Milling Co. put men at work in their copper bearing quartz mine; in April, the company abandoned the mine, the mineral not being found in quantity sufficient to warrant the continuance of the work.

Hingham. In June, Tower Toy Co., F. J. Burrell proprietor, sold to Geo. R. Healey Manufacturing Co. of New York, and business discontinued in this town.

Hinsdale. In October, a consignment of machinery for the Hinsdale Alpha gold mine received and installed. *November.* Hinsdale Woollen Co. shut down temporarily.

Holbrook. In June, Elihu Holbrook died, aged 73 years; he was one of the pioneer boot manufacturers of Norfolk County, being engaged in the business 50 years ago and continuing until 1895, when he retired.

Holden. In July, Dawson Manufacturing Co. completed addition to plant and installed new carding machinery. *September.* Glen Mills shut down for an indefinite period; later, leased by new company to operate it as Welsh-Gleason Manufacturing Co.

Holliston. In January, new machinery installed in plants of A. T. W. Brooks, overalls, and Superior Manufacturing Co. *February.* Cornelius F. Driscoll, shoes, shut down indefinitely; in September, started up; in November, shut down for 2 months. *April.* A. T. W. Brooks installed electric motor; later, retired from business.

HOLYOKE. In January, new dam of the Holyoke Water Power Co. completed, the last of 10,996 pieces of stone being placed in position; the first stone was laid July 11, 1895. The old dam was built in 1849. —— Deane Steam Pump Co. received an order for 70 duplex pumps from Hong Kong, China. —— S. H. Young began manufacture of brooms. —— Valley Paper Co. began manufacture of photograph paper. —— Connecticut River Paper Co. shut down one week on account of low water. —— Merrick Thread Co. shut down one week owing to accident to shafting. —— Holyoke Plush Co. incorporated under laws of Maine; authorized capital, $50,000; to operate idle mills of the Chadwick Plush Co.

February. Riverside Paper Co. shut down on account of high water.

March. Lyman Mills broke ground for new engine room and electric plant building. —— Connecticut Valley Lumber Co. shut down for repairs. —— Farr Alpaca Co. began on addition to dyehouse, 2 stories, 45 x 35 feet. —— Holyoke Paper Co. shut down one week for repairs.

April. Weave room of Germania Mills shut down part of a day on account of accident to machinery. —— Holyoke Belting Co. moved into larger quarters. —— Holyoke Paper Co. sold their No. 1 mill to the American Writing Paper Co. and began foundation for a new mill and engine house. —— Storehouse of Newton Paper Co. damaged by fire.

May. Merrick Thread Co.'s No. 1 mill shut down on account of accident to machinery. —— Beebe & Holbrook, paper, shut down on account of dull trade. —— A portion of the Wm. Skinner Manufacturing Co., silk goods, shut down for repairs.

June. Both mills of the Riverside Paper Co. shut down for one week. —— Whitcomb Winding Co. succeeded by the Myer Thread Co. and moved to Springfield. —— William Koezel, bottler, added new bottle filling machine. —— Lyman Mills damaged by fire.

July. Wm. Skinner Manufacturing Co. shut down for one week's vacation. —— Parsons Paper Co. and National Blank Book Co. shut down for repairs.

August. Holyoke Water Co. shut water out of canals one week and the various mills took advantage of the opportunity to shut down and make repairs; in September, water again drawn off on account of low condition of the Connecticut River. —— Timothy B. Flanders, lately of the firm of spindle manufacturers, Buttrick & Flanders, died, aged 74 years.

October. Rag room of Holyoke Paper Co. damaged by fire. —— Benjamin F. Perkins, of B. F. Perkins & Son, died, aged 74 years.

November. Chadwick Plush Co. petitioned for dissolution. —— William Constable, formerly a member of firm of McCallum & Constable, silk goods, died. —— H. M. Farr, founder of Farr Alpaca Co., died, aged 59 years. —— Eureka Hose Supporter Co. discontinued manufacturing.

December. Holyoke Thread Co. incorporated; authorized capital, $15,000; to manufacture mercerized thread in plant of American Quilt Co.

Hopedale. In January, Draper Company added new lathes, drills, planer, and milling machines; in February, began on addition to foundry plant, new machine shop, and boiler and engine house; completed in October; in July, added new planer; in August, added new press; in December, added new milling machine.

Hopkinton. In January, Milford Shoe Co. bought idle machinery of Cloutman & Dunham, and moved it to Milford. *March.* Crooks, Root, & Co., shoes, shut down temporarily on account of bursting of an automatic sprinkler; in June, shut down for a week's vacation.

Hubbardston. During the year, the Hygienic Blanket Co. built an addition, one story, 60 x 20 feet.

Hudson. In January, grinding and cementing departments of Apsley Rubber Co. damaged by fire. *March.* Hudson Spinning Co. sold to Queensbury Mills Co. and machinery moved to new plant at Worcester. *April.* Joseph Watmouth, retired worsted goods manufacturer, died. *May.* New rubber boot and shoe factory of Apsley Rubber Co. completed. *June.* Wm. F. Hawley withdrew from the corporation Stowe, Bills, & Hawley, shoes; in October, change was made from corporation to private firm under name of E. M. Stowe & Co.

Huntington. In January, work begun on new paper mill for Chapin & Gould. *June.* Cog room of Chester Paper Mill damaged by fire. *October.* Massasoit Woollen Mill shut down to install new water wheel.

Hyde Park. In January, fire damaged shoddy mill of T. H. Gray & Co. *February.* American Loom Co. organized under New Jersey laws to take over patents and business of Universal Loom Co. and all the property of the Readville Machine Co. *October.* Glover & Willcomb, curled hair, began construction of new dry house, 2 stories, 44 x 32 feet; completed in December.

Ipswich. In February, William M. Williams, stone polisher, died, aged 38 years. *July.* Ipswich Mills began work on addition to plant for manufacture of yarn and also added story to dyehouse.

Lancaster. In March, Lancaster Shoddy Mill, recently started by Byron E. Simpson, totally destroyed by fire; not to be rebuilt. *June.* Lancaster Manufacturing Co. began work on new mill, 40 x 36 feet; during the year, installed new machinery. *September.* Lancaster Comb Co. organized and work begun in small way; in November, repairs made and increased force put to work.

Lanesborough. The Berkshire Coöperative Glass Co. ran only during month of January; charter surrendered and business discontinued.

LAWRENCE. In January, the Weld Bobbin & Spool Co. moved into larger quarters. —— Local mills suffered several shutdowns owing to low water. —— Everett Mills and Pacific Mills damaged by fire. —— Operations resumed in Fred. Hartley's wool scouring mill, which was damaged by fire in December, 1899.

February. Lawrence Dye Works began foundation for new dyehouse, 90 x 45 feet, and new plant, 3 stories, 160 x 60 feet; completed in October. —— Nearly all the mills and large factories were shut down on account of high water. —— Pacific Mills' stockholders voted to increase capital stock $500,000.

March. Arlington Mills added new looms. —— High water for the second time this spring affected the mills.

April. Merrimac Paper Co. added new boilers and engines. —— Union Shuttle Co. damaged by fire. —— Lawrence Dye Works incorporated under name of Lawrence Dye Works Co. —— Arlington Mills added new machinery. —— Kimball Bros., shoes, shut down for 2 weeks. —— Work begun on new storehouse for Washington Mills; completed in December. —— Crescent Worsted Mill damaged by fire.

June. E. Frank Lewis, wool scourer, partially shut down on account of dull trade. —— Dyehouse and finishing departments of Pacific Mills shut down several days for repairs. —— Arlington Mills shut down for stock taking; later, shut down mule and ring spinning rooms a day on account of accident; later, picker room damaged by fire.

July. Washington Mills shut down 4 weeks for repairs and addition of new engine. —— Pacific Mills shut down one week for vacation; later, added new boiler. —— E. Frank Lewis' wool scouring mill shut down owing to accident. —— Arlington Mills shut down its wool shop indefinitely; later, shut down mule and drawing rooms for repairs to roof; later, shut down reeling room indefinitely. —— Nearly all the mills either shut down entirely, or ran part of their machinery, or ran on part time; besides those mentioned above, Butler Worsted Mills shut down for 3 weeks, and the combing and carding departments of the Prospect Mills were shut down; the reasons given were over-production, uncertainty in prices of raw materials, disturbances in China, etc.

August. Union Shuttle Co. shut down for one week. —— Pacific Mills installed an economizer in connection with the new battery of boilers. —— Arlington Mills added new engine room to cotton department; later, shut down woollen weave room for 3 days. —— Everett Mills shut down for vacation. —— Atlantic Cotton Mills shut down 2 weeks for vacation and repairs. —— Pemberton Mills shut down for repairs.

September. Fly wheel burst at Atlantic Cotton Mills killing one person instantly and seriously injuring other operatives. —— Washington Mills shut down temporarily on account of accident to engine.

October. Pemberton Mills added new spinning frames. —— Lawrence Duck Co. added new water wheels. —— Pacific Mills at work on addition to dyehouse.

November. W. A. Smith, of Stedman & Smith, brass founders, died. —— B. C. Taylor, treasurer Leland Belting Co., died; company disposed of stock and machinery and business discontinued.

December. Globe Worsted Mill and Prospect Worsted Mill shut down indefinitely and were petitioned into bankruptcy. —— The majority of the mills shut down immediately before Christmas and remained closed until after the beginning of the new year.

During the year, Walworth Bros. installed new looms and added new dressing machines. —— Wm. & Chas. Beck, linen fire hose, moved into larger quarters and added new looms.

Lee. In January, the idle Forest Mill property sold to John T. F. McDonnell of Holyoke for investment; plant had been idle for 14 years. —— New machinery added to Eagle Mill and Housatonic Mill. *February.* High water caused considerable annoyance among the local mills. —— The Eaton, May, & Robbins paper mill shut down permanently. *March.* New machinery set up in paper mills of Eaton, Dikeman, & Co., Smith Paper Co., and the sawmill of Lee Marble Co. *May.* F. S. Gross built an addition to his marble sawmill and added new boilers. *October.* Clark & Spencer shut down on account of low water. —— Smith Paper Co. added new dusters, one in the Eagle and one in the Columbia Mill; in November, mills shut down partially on account of low water. *December.* Eaton, Dikeman, & Co. added new engine. —— Martin Deeley & Co. changed name of concern to The Lee Lime Co. and added boiler, engine, blower, and lime crusher to plant. —— F. S. Gross added new rubbing bed to his marble plant.

Leicester. In May, Robert S. Olney, treasurer Geo. W. Olney Woollen Co., died. *November.* Eli Collier sold his satinet mill to J. J. Shepard, former superintendent, who continued; Mr. Collier retired from business after being 52 years in the Cherry Valley district, 47 years as owner of the mill.

Leominster. In February, nearly all of the factories suffered from floods caused by the high water and numerous temporary shutdowns occurred. *March.* F. A. Clapp Horn Co. added new machinery. —— Williams & Winn, combs, shut down on account of breaking of shafting. *May.* Smith's piano case factory shut down on account of accident to machinery. —— Whitney Carriage Co. at work on addition to main building, 40 feet long. —— American Comb Co. began manufacturing, added new machinery. —— Pickering-Metcalf Co.'s comb factory damaged by fire. *June.* Leominster Worsted Co. added new looms. —— Geo. A. Gane Shirt Co. shut down 2 weeks for stock taking. —— Paton Manufacturing Co., horn combs, changed from private firm to corporation, retaining same name. *July.* New boilers added to plant of Whitney Carriage Co. —— Cluett, Peabody, & Co. shut down 2 weeks for repairs. *August.* F. A. Whitney purchased the property of the W. S. Reed Toy Co. for the benefit of the United States Thread Co., and began repairs and improvements. *September.* Geo. A. Gane Shirt Co. discharged its finishers. *October.* Leominster Button Co. increased capacity. —— Pickering-Metcalf Co. shut down for inspection of boilers. —— Star Button Co. moved to larger quarters and added new machinery. —— F. G. Smith Piano Case Co. added new boiler. —— Leominster Manufacturing Co. damaged by fire. *December.* United States Thread Co. installed new machinery and added new boiler and engine. —— Leominster Button Co. shut down for short vacation. —— W. D. Earl & Co., combs, shut down 10 days for stock taking. —— Geo. W. Wheelwright Paper Co. added new engine. —— Star Button Co. shut down one week. —— Warren Goodale & Co. leased plant for manufacture of horn goods.

LOWELL. In January, local mills were seriously handicapped by low water. —— The Shaw Stocking Co., Boott Cotton Mill No. 1, Hamilton Manufacturing Co., Appleton Company, Lowell Hosiery Co., and Geo. D. Swain, cigars, damaged by fire.

February. Local mills were generally shut down for short periods owing to high water; also shut down in March for same reason.

March. Smith Machine Screw Co. succeeded by S. C. Smith. —— Merrimack Print Works shut down on account of dull trade. —— Shaw Stocking Co. began on new yarn mill. —— Tremont & Suffolk Mills at work on addition to raw-stock dyehouse; new machinery added. —— James Dugdale, retired worsted goods manufacturer, died, aged 77 years.

April. New plant of Hooper Knitting Co. completed and work of fitting with machinery begun. —— Haworth & Watson, cop tubes, added new machinery. —— Lowell Bleachery shut down for repairs. —— Work on foundation begun on engine house and electric power plant for Merrimack Manufacturing Co.

May. Fifield Tool Co. began on addition, 50 x 120 feet. —— Richard Dobbins, machinery, discontinued business; no successor.

June. Middlesex Co. shut down for lack of orders. —— Standard Bottling Co. transferred business to Standard Bottling Co. Incorporated. —— Work begun on foundation

for 2 additions to Boott Mills, picker house, 4 stories, 92 x 24 feet, and cloth room, 3 stories, 30 x 24 feet; completed in December. —— J. W. Goulet, baker, sold to Joseph Dufort. —— Appleton Mills began on 4 story addition for speeder room, and increased capacity of napping plant. —— Thos. C. Entwistle, warps, etc., added new machinery. —— Following plants damaged by fire: A. Bachelder & Co., bungs and plugs; Otis Allen & Son, boxes; Lowell Hosiery Co.; and Lowell Wire Works. —— Frank S. Perkins, machinist, died. —— Augustus Lowell, formerly connected with the Boott Mills, Merrimack Manufacturing Co., Massachusetts Cotton Mills, and Lowell Manufacturing Co., died at his home in Brookline.

July. Merrimack Manufacturing Co. increased capital stock $250,000. —— Belvidere Mill No. 1 shut down and installed new machinery. —— Massachusetts Mohair Plush Co. added new plant for sorting and scouring; also began manufacture of novelty yarns. —— Samuel Greenwood, retired woollen manufacturer, died, aged 81 years; in 1864, he, with Wm. Walker and Wm. Jewett, formed firm for manufacture of woollen goods under name of Wm. Walker & Co.

August. Lowell Manufacturing Co., carpetings, shut down ingrain department temporarily. —— Tremont and Suffolk Mills and Massachusetts Cotton Mills shut down one week. —— Middlesex Co. started its dyehouse; the other departments remained closed until later in the month. —— Fires for month: New England Printing Co., E. Hapgood & Son, and Tremont and Suffolk Mills.

September. A new concern under name of Waterhead Mills Co. fitted up Kendall Mills for manufacture of corduroy cloth. —— No. 1 mill of Belvidere Woollen Manufacturing Co. shut down. —— Andrew Y. Rodger began manufacture of narrow fabrics. —— Hooper Knitting Co. set up its machines and by middle of November was in full running order. —— J. M. Stover, shoes, succeeded by Stover & Bean.

October. John McAskie, awning manufacturer, died.

November. Harvard Brewing Co. began foundations for new brewery, 4 stories, 200 x 75 feet, and new office building, 2 stories, 52 x 52 feet; later, portion of old plant damaged by fire. —— Plant of late Frank S. Perkins sold at auction.

December. Pickering Knitting Co. voted to build new storehouse, dyehouse, and bleachery. —— Massachusetts Mills began demolition of old tenements to make way for new storehouse, 11 stories, 100 x 300 feet. —— J. C. Ayer Co. closed all departments for the afternoon of Dec. 31, to open again at 10 o'clock the first of the new year.

Ludlow. In January, roof put on new gunny mill of Ludlow Manufacturing Co.; in August, completed new mill 433 x 128 feet with wing 147 x 69 feet; power for this plant to be electricity, each room being driven by an independent motor.

LYNN. In January, John Lancy, Jr., of Marblehead, completed removal of plant from that town, occupying factory of defunct Hurley Shoe Co. —— General Electric Co. started foundation for new foundry, 120 x 150 feet. —— Faunce & Spinney added new machinery and moved into larger quarters; old factory taken by A. E. Little & Co. —— Machinery of Hurley Shoe Co. disposed of at private sale. —— Chas. P. Buckley, innersoles, moved to Salem. —— Cigar factory of Geo. D. Swain, printing plant of Perry & Wilkinson, and bookbindery of Lambert Jackson damaged by fire. —— Austin & Dyer, cut stock, began manufacturing. —— Lynn Die Co., shoe dies, etc., began manufacturing.

February. W. D. Sprague, shoes, succeeded by W. D. Sprague & Co. —— P. P. Sherry & Co. succeeded by Sherry Shoe Co. —— Tufts & Friedman and G. W. Ingalls & Co., established manufacture of shoes. —— E. W. Burt & Co. and C. H. Henderson & Co. moved into larger quarters. —— A. Sidney Alley, shoes, succeeded by Alley & Newhall. —— New England Die Co. began operations. —— Chas. B. Tibbetts, shoe manufacturer, died at Cairo, Egypt. —— Fire damaged plants of Morning Star Shoe Co. and W. D. Sprague & Co.

March. S. J. Hollis & Co., shoes, sold stock and fixtures at auction and retired from business. —— H. S. Johnson incorporated as the H. S. Johnson Co. —— Thos. H. Bresnahan, morocco, discontinued manufacturing; no successor. —— Alfred Fisher established manufacture of slippers. —— Davis & Eastman, shoes, moved into larger quarters. —— Fire damaged cut stock plant of W. & E. W. La Croix.

April. General Electric Co. completed new foundry, one story, 120 x 150 feet. —— Automatic sprinklers in morocco factory of T. A. Kelly & Co. sprung a leak and damaged goods. —— I. G. Sutherland & Sons, last makers, moved business from Haverhill to this city. —— Ryan Stain & Blacking Co. moved into larger quarters. —— Russell Counter Co. leased plant and moved here from Woburn. —— Churchill & Alden, shoes, moved into larger quarters. —— E. Knowlton Fogg, retired shoe manufacturer, died, aged 63 years.

May. New England Stock Co. began manufacturing. —— W. D. Sprague & Co., shoes, moved to Newton, N. J. —— C. D. Pecker & Co., shoes, shut down one day. —— Arthur E.

Gloyd shut down one week for stock taking. —— Walton & Logan, shoes, increased capacity. —— Frank Keene Co., shoes, increased capacity. —— Factory of Skinner & Scott, carriage wheels, sold at auction. —— General Electric Co. started on foundation for engine room, 2 stories, 50 x 56 feet, and boiler room, 36 x 38 feet; completed in December. —— Thos. Collyer, shoes, discontinued manufacturing; no successor. —— Collyer & Woodman, innersoles, began manufacturing. —— Granite Shirt Co. damaged by fire.

June. The XXX Shoe Co. began manufacturing. —— Essex Machine Co. dissolved; Alfred Adamson continued under old name. —— Thos. A. Kelly & Co., morocco, began on addition to plant. —— H. W. Marden began manufacture of patterns. —— Goodwin Bros., lasts, dissolved; L. T. & G. L. Goodwin continued under old name. —— Twentieth Century Perfect Repair Co. succeeded to business of Sachem Shoe Manufacturing Co. of Salem. —— A. E. Little & Co., shoes, shut down temporarily.

July. R. E. Hilliard, cut soles, shut down on account of loss of power. —— J. B. Renton & Co., heels, shut down temporarily. —— E. W. Burt & Co., Joseph Caunt & Co., A. E. Little & Co., Ingalls & Co., and Chas. F. Richardson, shut down 2 weeks on account of new boilers being installed. —— Welch & Landregan, D. A. Donovan & Co., Luddy & Currier, John H. Parke, Stewart Bros., Chick & Johnson, C. J. Philbrook, C. H. Henderson & Co., W. J. Creighton & Co., and A. & A. D. Fisher, shut down week of 4th of July. —— Chick & Johnson moved into larger quarters. —— Joseph Caunt & Co. dissolved; Joseph Caunt continued under old firm name. —— Ricker & Hilton, shoes, increased capacity. —— Geo. J. Leonard began manufacture of shoes.

August. Shillaber Shoe Co. succeeded to business of Daniel H. Shillaber. —— Geo. E. Bartlett & Co., shoes, dissolved. —— F. L. Bubier, cut soles, moved into larger quarters. —— Davis S. Packard, retired shoe manufacturer, died, aged 74 years.

September. North Stain & Blacking Co. dissolved; James D. North continued under old name. —— General Electric Co. began foundation for new machine shop, one story, 200 x 118 feet. —— Factory of Faunce & Spinney damaged by collapsing of water tank on roof. —— Welch & Landregan, shoes, began on addition to plant, 5 stories, 100 x 45 feet. —— Eugene W. Hunt, stitching, retired from business; succeeded by H. A. Fuller, Jan. 1, 1901. —— A. E. Copp, cigars, succeeded by E. C. Copp, who, in December, discontinued manufacturing; no successor.

October. A. A. Pitman & Co., brushes, moved into larger quarters. —— Henry Alberts, shoes, moved from Swampscott to this city. —— Hygienic Rubber Co. succeeded to the business of the Don't-Slip Heel and Sole Co. —— A. E. Little & Co. began manufacture of lasts for their own use. —— Fred M. Page & Co., linings, etc., moved from Peabody to this city. —— Cook & Hart, slippers, moved into larger quarters. —— Luddy & Currier, shoes, increased capacity. —— W. E. Goldthwaite & Co., heels, dissolved; W. E. Goldthwaite continued. —— Frye & Griggs, shoes, discontinued manufacturing; no successor.

November. Stewart Bros., machinery, increased capacity. —— Strout Shoe Co. succeeded to business of Lizzie Strout. —— Chas. F. Richardson, slippers, increased capacity. —— Morse & Logan, Shillaber Shoe Co., Dore & Fairchild, Bailey, Curtis, & Co., Chas. A. Sager, Herbert Lefavour, Alley & Newhall, J. D. Mullen & Son, Henry Alberts, J. E. Jones, and Chas. L. Gay, moved into larger quarters. —— Dore & Fairchild, shoes, dissolved. —— Chas. H. Richardson, slippers, increased capacity. —— Phelan Shoe Manufacturing Co. began manufacture of shoes. —— Eckhardt & Ford, shoes, dissolved; Harvey R. Ford & Co. continued. —— Chas. H. Pinkham, president Lydia Pinkham Medicine Co., died, aged 56 years. —— Lynn Board of Trade issued the following statement to manufacturers: "The temporary shipping arrangement made by the Boston and Maine Railroad at the request of the Lynn Board of Trade, has now become permanent. The amount of freight required by the railroad management in order to give daily service by the way of Boston, instead of through Salem, as heretofore, is being shipped. Under this arrangement there is positively no delay in west-bound freight, as all goods delivered to the Lynn freight station leave Boston on fast freight lines the next afternoon. We wish to impress upon Lynn shippers the importance of taking advantage of this service. If the shipments are allowed to fall below the required amount, the railroad officials will discontinue the service from lack of support, and they would have strong ground for refusing to grant any favor the people of Lynn might ask in the future. The merchants and manufacturers ought to support this arrangement. The Board of Trade has made unceasing efforts to obtain it. It has effected a considerable saving in freight rates, and should have the co-operation of every business man in making this service a success."

December. Bemis & Wright, Arthur E. Gloyd, A. & A. D. Fisher, Cross & Tucker, Geo. H. Burt & Co., and Melanson & Currier, shoes, increased capacity. —— Gardiner, Beardsell, & Co. succeeded by New England Counter Co. —— Redfern Shoe Co. began manufacture of shoes. —— Spooner, Wise, & Co., counters, dissolved; Mr. Wise continued. ——

Henry Alberts, shoes, took partner and changed firm name to Henry Alberts & Co.—— Morton & Lyons dissolved; business continued under firm name of Morton & Son. —— Hennessey Shoe Co. occupied new addition to factory.—— The Good Wear Shoe Co. began manufacture of shoes.—— Wm. Porter & Son, shoes, completed removal to new factory, leased some time ago.—— Nicholas Weber, president Weber Leather Co., died, aged 54 years.—— Hammond M. Samson died, aged 28 years; he was head of Samson Manufacturing Co., manufacturers of inks, stains, etc.—— W. F. Hill, cut stock, died; business sold to Parker Bros. Manufacturing Co.—— Joseph G. Brown, heels, succeeded by John R. Morrow.

MALDEN. In February, factories operated by Boston Rubber Shoe Co. shut down owing to the unfavorable weather conditions.—— Adams Print Works incorporated; authorized capital, $10,000. *March.* Boston Steel & Iron Co. purchased lot of land for erection of new plant. *August.* Simeon Dodge, retired carpenter and builder, died, aged 85 years. *May.* Henry I. Jenkins, cigar manufacturer, sold to E. Hunt & Co. —— Malden Metal Enamel Co. sold to Bell Manufacturing Co. *November.* Porter Manufacturing Co. started manufacture of patent hold-backs for vehicle shafts.

Manchester. In May, work was in progress on the foundations for an electric power plant. *December.* David Fenton's boat building plant destroyed by fire.

Mansfield. In March, Geo. G. Sanborn, retired straw goods manufacturer, died. *September.* Chas. F. Orr, tubular shoe laces, equipped factory with additional machinery and resumed work.

Marblehead. In January, John Lancy, Jr., shoes, moved to Lynn.—— Timothy E. O'Brien, shoes, retired from business; no successor.—— Chadwell Tucker, shoes, sold machinery and stock to various persons and discontinued manufacturing.—— Brown & Denning, shoes, and Symonds, Coates, & Co., shoes, discontinued manufacturing; no successors. *February.* Fire damaged potato chip factory of Davis & Son. *April.* Wm. H. Green purchased building occupied by Wm. H. Boynton, and all the machinery, etc., was disposed of at auction. *May.* Russell Chase, shoes, succeeded by Mrs. J. F. Chase. *December.* William H. Boynton, shoe manufacturer, died.

MARLBOROUGH. In March, the Marlboro Automobile & Carriage Co. produced its first automobile; company was incorporated under Maine laws, Nov. 6, 1899, with authorized capital of $100,000. *August.* Inter State Hat Co. began manufacture of hats. *September.* John H. Armitage Co. began fitting up plant for manufacture of cement pulley covering.—— E. P. Longley shut down his box factory 2 weeks on account of accident to machinery; in October, began construction of engine house, 40 x 24 feet.

Maynard. In February, assignee of Assabet Manufacturing Co. announced final dividend of 12 per cent; many of the company's former employés were creditors, having deposited about $125,000 in the bank connected with the concern; this fund was involved in the failure and the depositors received about two-thirds of the amount due them. *November.* American Woollen Co. began improvements and alterations to Assabet Mills; new looms added and preparations made for additions for wet finishing room and for waste houses.

Medway. In July, Abner M. Smith, shoes, shut down. *September.* Cole, Senior, & Co.'s woollen mill reopened for business; in November, added new electric plant, new engine, and additional boiler. *November.* Winthrop Manufacturing Co. succeeded by the New England Union Garment Co. *December.* Hodges & Burns leased and purchased property to start manufacture of straw hats.

Mendon. In May, shoddy mill of Mrs. Hannah S. Swan destroyed by fire; this was the last industry left in the town and had been recently equipped with new machinery.

Merrimac. In January, carriage factory of A. W. Chase destroyed by fire. *October.* Carriage factory of H. G. & H. W. Stevens sold at auction.

Methuen. In February, Gaunt Bros. added new engines.—— Fire damaged dyehouse of Methuen Co. and high water caused several temporary shutdowns. *April.* Tenney's hat factory shut down for repairs on boilers.—— Methuen Yarn Mill added new engines.

——Methuen Co. made repairs and moved dyehouse to remodelled building.—— Tremont Worsted Co. added new engine.—— Knitted Fabrics Co. began on addition to new dyehouse. *May.* Methuen Co. added 2 new turbine wheels and installed new dyeing machinery; in August, shut down a few days for vacation. *August.* Knitted Fabrics Co. shut down three days owing to accident to machinery. *September.* Methuen Co. added fan outside boiler house to create more draft for the boilers.—— Knitted Fabrics Co. shut down dyeing and finishing departments for 10 days.

Middleborough. In February, Farwell Worsted Co. began operations in old Star Woollen Mill. *March.* Phinney & Penniman, shoes, succeeded by Penniman Bros.—— Work begun on new shoe factory for Leonard & Barrows, 4 stories, 261 x 45 feet; completed in June. *April.* Star Mills added new looms. *July.* Alden, Walker, & Wilde began manufacture of men's shoes.—— Keith & Pratt, shoes, shut down for a few days' vacation.—— J. M. O'Donnell & Co., shoes, moved to Brockton.—— Nathaniel J. Ryder, of Burbank & Ryder, died, aged 55 years. *August.* New engine at Leonard & Barrows shoe factory started.—— Addition to Farwell Worsted Co. begun; in October, suspended operations in spinning department permanently, the machinery not being suitable to the class of goods produced.

Milford. In January, Milford Shoe Co. removed machinery from idle factory of Cloutman & Dunham at Hopkinton.—— Magid-Hope Silk Co. bought land for new power house. *February.* Shea Pink Granite Co. and Darling Bros. combined; in April, sold property and business to the Bay State Pink Granite Co. *March.* Contract let and work begun on new mill for Magid-Hope Silk Co., 2 stories, 60 x 120 feet; in June, completed power house; in July, installed spinning frames, drying, gassing, garnetting, and carding machines, and reels and buffers; in August, purchased additional land for an extension of plant; in October, began operations. *July.* Factory of Greene Bros., shoes, repaired.—— Franklin Iron Foundry shut down temporarily on account of the heat. *December.* Excavating begun for two additions to factory of Milford Shoe Co., 3 and 5 stories, 28 x 56 and 35 x 70 feet.—— Clapp, Huckins, & Temple, shoes, shut down for stock taking.—— W. B. Hale Cigar Manufacturing Co. damaged by fire. *During the year*, Wm. Lapworth & Sons purchased the plant occupied by them and began on enlargements and improvements.

Millbury. In February, Bowden Felting Co. began erection of new dyehouse, one story, 30 x 50 feet; in March, added new machinery. *April.* Ramshorn Manufacturing Co. incorporated; authorized capital, $20,000; to operate mill formerly run by Edwin Hoyle & Son. *May.* E. F. Rice & Co., print cloths, began closing down mill in part; in June, shut down permanently. *June.* Weaving department of Ramshorn Mill shut down temporarily to allow other departments catching up; a steam engine added to supplement water power; in September, all departments were running on double time. *September.* New engine added to plant of Whitney, McDuff, & Co.—— Wood turning shop and 2 storehouses of Henry F. Glover destroyed by fire. *December.* John B. Barton, manufacturer of dress suit case frames, died.—— Union Hammock Co., of Boston, leased plant and began preparations for operating 5 looms.

Millis. In June, the National Flax Fibre Co. purchased idle plant of the Steel Edge Co. and began refitting plant for manufacture of linen crash and knit linen underwear; 5,000 spindles and 400 looms comprised full equipment; company incorporated with authorized capital of $5,000,000; in December, samples produced and looms started on full time.

Milton. In September, work begun on addition to chocolate mill of Walter Baker Co.

Monson. In January, Massasoit Woollen Mills, of Huntington, leased Branch Mill of S. F. Cushman & Sons and began work in dyehouse department; in July, shut down for repairs. *March.* Theodore Reynolds, woollen goods manufacturer, died. *May.* Solomon F. Cushman, woollen goods manufacturer, died, aged 73 years. *June.* D. W. Ellis & Son shut down mill for repairs; later, shut down on account of low water. *July.* Heiman & Lichten, straw goods, began foundation for additions to their whittling room and box shop. *November.* North Mill of R. M. & Theo. Reynolds, which had been closed for 2½ years, sold to Heritage & Hirst for the manufacture of woollen dress goods; in December, second, or "new" mill sold to D. W. Ellis & Son and ground broken for addition, 2 stories, 40 x 80 feet.—— Edward D. Cushman retired from firm of S. F. Cushman & Sons; business continued by surviving partner under old name. *December.*

Heritage & Hirst began weaving samples.—C. F. Grosvenor, woollen goods, began erection of storehouse.—D. W. Ellis & Sons' mill shut down owing to death of William J. Ricketts, aged 62 years, a member of the firm.

Montague. In May, idle Marshall Paper Mill sold to Massachusetts Loan & Trust Co.; in June, plant again sold to A. W. Esleeck, formerly of the Esleeck Paper Co., of Holyoke, and work of refitting begun; in September, last of new machinery set up; in October, mill started up; later, began construction of coal sheds.—John Russell Cutlery Co. shut down for three weeks; in July, shut down for repairs; in September, shut down for one day's vacation; in December, shut down over holidays. *June.* International Paper Co. damaged by fire; in September, added new paper machine. *December.* All the mills in town shut down for Christmas holidays.

Nantucket. In September, H. N. Bennett, retired shoe manufacturer, died, aged 63 years.

Natick. In April, the business of the late P. T. Doherty, cut stock, sold to D. J. Murphy & Co.

Needham. In January, Roper Bros. & Co., knit goods, completed 2 story addition, 65 x 20 feet. *July.* Moseley & Co., W. Carter & Co., and Brook & Brett shut down their knitting mills for vacation. *August.* Wye Bros. & Co., knit goods, dissolved; business continued by surviving partner; in October, work on new addition begun, and machinery for athletic goods added. *December.* Moseley & Co. staked out lot for erection of addition to hosiery mill, 3 stories, 20 x 30 feet.

NEW BEDFORD. In January, New England Cotton Yarn Co. damaged by fire. *February.* Rotch Mills added new engine.—Oneko Woollen Mills and Wamsutta Mills added new machinery.—New Bedford Copper Co. voted to consolidate with the Revere and Taunton Copper Companies; in May, ceased operations as separate concerns and were merged into the Taunton-New Bedford Copper Co.—Acushnet Mills added new speeders, new looms, and completed new weave shed. *March.* New England Cotton Yarn Co. began on new mill, 2 stories, 296 x 112 feet. *June.* The Niagara Silver Co. of Niagara Falls, N. Y., purchased the flat-ware department of the Pairpoint Manufacturing Co., and leased a portion of plant. *July.* Hathaway and Wamsutta Mills added new humidifiers. *December.* Potomska Mill shut down a few hours on account of accident to machinery.—Grinnell Manufacturing Co. increased capital stock $200,000. *During the year,* Dartmouth Manufacturing Corporation began on erection of addition to plant.—New England Cotton Yarn Co. built addition to Bennett Mill and installed new spindles.—Announcement made of organization of Soule Mills Corporation to manufacture lawns, and other fine goods; expect to build a new mill and become incorporated with authorized capital of $600,000.—Pairpoint Manufacturing Co. reorganized and reduced capital stock from $1,000,000 to $300,000.

Newbury. In February, Byfield Snuff Co. installed dynamo for power and light. *June.* Byfield Woollen Co. slightly damaged by fire; later, began work on addition to plant; in July, increased capital stock to $50,000; in November, added new machinery.

NEWBURYPORT. In February, New England Fireproofing Co. increased capacity.—Burley & Stevens, shoes, moved into larger quarters.—Caunt & Co. established under name of Baby Shoe Co.; in July, James M. Caunt assumed sole charge of business. *March.* William Burley established Merrimac Specialty Manufacturing Co. for production of articles of household use.—Geo. D. Brown, retired pump and block manufacturer, died, aged 69 years. *April.* Machine shop of the Fiberloid Co. damaged by fire.—Burley & Usher shut down for repairs. *June.* Merrimac Hat Co. changed character of goods at factory, making women's wool hats.—John H. Teel sold to W. E. Bodine who continued under name of Newburyport Counter Co.; in November, sold to Brackett Heel Co. *July.* Towle Manufacturing Co. shut down for 4 weeks.—Eben P. Goodwin, retired sailmaker, died, aged 76 years. *August.* Merrimac Specialty Manufacturing Co. found business unprofitable and closed out; no successor.—Chase Camera Co. gave up manufacturing.—Peabody Manufacturing Co. shut down for repairs and alterations.—Dodge Bros., shoes, began on addition to factory, 2 stories, 42 x 90 feet. *November.* Doyle-Stevens Counter Co. began manufacturing. *December.* Peabody Manufacturing Co.'s No. 1 Mill shut down for an indefinite period.—Edward Perkins Lumber Co. added new boiler.

NEWTON. In February, plant of Masten & Wells, fireworks, damaged by explosion. *June.* Ezra B. Blackwell, shirt manufacturer, died, aged 75 years; business discontinued.

Norfolk. In November, City Mills of the American Felt Co. added new boiler.

NORTH ADAMS. In January, William Goodale purchased carriage factory of John Rofenole.—— Arnold Print Works damaged by fire.

February. Nearly all of the local manufacturing plants were shut down temporarily on account of high water.—— Darby & Moore, duck suits, began preparations to move plant to Conway.

March. Hygeia Ice & Cold Storage Co. organized and began erection of factory building, two stories, 80 x 80 feet.—— Wilkinson & Bliss, shoes, shut down permanently.—— A. B. Cleveland Co. established manufacture of shoes; later, discontinued business.—— Sawmill and lumber business of Canedy & Carpenter sold to A. S. Farnum & Bros. Co. of Cheshire.—— Clark Biscuit Co. fined $50 for running overtime.—— Pump house of Arnold Print Works damaged by fire.

April. Boston Finishing Works shut down for repairs.—— Office of N. L. Millard & Co., shoes, torn down to make room for an addition to factory. This office might be called one of the historical buildings of the city, it having been built 80 years ago by Turner & Laflin, who were the originators of the Windsor Print Works. A brick building which was demolished 50 years ago stood near, and both were a part of the same property, which was used in turn by various men and firms carrying on different kinds of business. After Turner & Laflin discontinued, a furnace was established in the brick building and stoves were cast. For a time Cook & Southwick had a sawmill there, and Darling & Rathbone had a barrel, stave, and planing mill on the premises. Briggs Bros., who later ran the Briggsville Mill, in Clarksburg, began the manufacture of woollen warp there, and for a few months, many years ago, Orrin Witherell and his son, Edward J., carried on blacksmithing in the rear of the brick building; they then built a shop in Willow Dell, where E. J. Witherell is still in business. The office, now torn down, was used as such by many of these firms, and has been so used by Millard & Co. for some years past.

May. Windsor Company began work on foundation for addition to plant, 2 stories, 100 x 60 feet.—— W. G. Cady sold his interest in the shoe factory and business of W. G. Cady & Co. to N. L. Millard & Co.; new firm established under name of Fairfield, Millard, & Co. to continue the business.—— James Hunter Machine Co. began foundation for new foundry, one story, 200 x 87 feet; completed and started up in November.—— Dyehouse of Windsor Company shut down for repairs.—— Print department of Arnold Print Works shut down for repairs; padding room damaged by fire; work begun on enlargement of storehouse.

June. Daniel Reardon, retired cigar manufacturer, died, aged 64 years.—— Greylock Mills shut down 2 weeks for stock taking.

July. James Hunter Machine Co. began on pattern storehouse, 2 stories, 100 x 40 feet.

August. Fire damaged plants of James Hunter Machine Co., Eclipse Mill, and North Adams Brick Co.—— Work begun on new dyehouse for Windsor Company.

October. Eagle Mill of the Windsor Company shut down owing to bursting of a water pipe.

December. Elbridge Hodskins died, aged 76 years; he was for many years engaged in the brewing business and brewed what was known as "English ale."

NORTHAMPTON. In January, Roland S. Bartlett, retired basket manufacturer, died, aged 81 years. *March.* Waldo H. Lamb bought the Cowles & Child property to manufacture wire. *April.* Fire damaged foundry of Florence Machine Co.

North Andover. In May, American Silk Wiping Cloth Co. damaged by fire; resumed operations in August and added new looms. *June.* Joseph P. Battles died, aged 78 years; he was for 37 years connected with the Atlantic Cotton Mills of Lawrence, and since 1881, principal owner and treasurer of Lawrence Machine Co. *July.* Davis & Furber Machine Co. added new boilers.—— Osgood Mills shut down for repairs. *August.* American Card Clothing Co. shut down one week.—— Sutton's Mills added new turbine wheel. *September.* Brightwood Manufacturing Company shut down part of a week; in October, shut down for a few days.

North Attleborough. In January, E. D. Gilmore & Co. moved into larger quarters. *February.* Plant of D. D. Codding & Co. leased and stock and fixtures bought by Daggett

Jewelry Co., the Daggett Co. moving here from Attleborough.——J. A. & S. W. Granbery bought interest of F. H. Cutter in firm of Cutter, Granbery, & Co., and removed to Newark, N. J.; F. H. Cutter resumed business under name of F. H. Cutter & Co. *March.* Joseph Finberg purchased business of Curtin Jewelry Co.——F. M. Whiting & Co. shut down for stock taking. *May.* Codding & Heilbrun Co. shut down one week for repairs. *June.* F. M. Whiting & Co. shut down 2 weeks for vacation. *July.* W. J. Bell & Co. shut down a few days. *August.* Globe Jewelry Co. shut down for a few days.——G. K. Webster shut down for repairs.——A. H. Bliss & Co. shut down for repairs.——Lenan, Thomas, & Co. shut down for a few days.——O. M. Draper, jewelry manufacturer, died; all the jewelry shops shut down one afternoon on this account.——George A. Dean, jewelry manufacturer, died, aged 66 years. *November.* H. F. Barrows & Co. shut down one day.——John Shepardson of H. D. Merritt & Co., jewelry manufacturers, died. *December.* Arthur E. Codding, jewelry manufacturer, died.

Northborough. In January, Woodside Mills shut down on account of accident to engine and water main; in August, shut down finishing room, reopening later; in October, shut down part of the plant on account of lack of orders. *June.* Northborough Woollen Mills shut down 2 days on account of accident to machinery.

Northbridge. In April, Whitin Machine Works began on addition; completed in August. *June.* Whitinsville Spinning Ring Co. added new machinery. *August.* Whitinsville Cotton Mills added new engine. *December.* Paul Whitin Manufacturing Co. added new spinning frames.

North Brookfield. In July, E. & A. H. Batcheller Co. shut down for stock taking; in December, cutting department shut down to allow rest of the plant to catch up.

Northfield. In November, sawmill of Alden Parker destroyed by fire.

Norwood. In February, H. M. Plympton began on addition to bindery plant, 4 stories, 50 x 60 feet.

Orange. In January, New Home Sewing Machine Co. shut down one day for inventory; in September, shut down one week for vacation; in October, began on addition, 2 stories, 200 x 40 feet. *July.* Orange Shirt Co. shut down 2 months.

Oxford. In April, the Rhodes Mill property sold to Thayer Woollen Co.——Texas Mill of Thayer Woollen Co. damaged by fire.——Work started on erection of new weave shed and dyehouse plant for David N. Taft. *November.* Chaffee Bros. Co. began erection of lumber mill, 3 stories, 50 x 75 feet; incorporated as Chaffee Bros. Co. *December.* Glen Woollen Mill shut down on account of accident to machinery.

Palmer. In February, mills in the several villages affected by high water causing temporary shutdown. *March.* Wright & Colton Wire Cloth Co. began adding machinery and making preparations to add the manufacture of wire nails to its product. *April.* Potter & Bond installed new edger and blower in their sawmill.——Henry P. Holden of Holden & Fuller, woollen goods, died. *July.* Dyehouse of Palmer Carpet Manufacturing Co. struck by lightning and damaged by fire. *August.* A. E. West of New York leased vacant factory of O. J. Powers & Sons for manufacture of straw hats.——Thorndike Co. shut down for one week. *September.* Owing to low water, Thorndike Mills were not able to run continuously on full time.

Peabody. In February, National Calfskin Co. began manufacturing. *March.* Joseph S. Hodgkins, retired tanner, died, aged 86 years. *April.* Factories of W. P. Clark & Co. shut down on account of dull trade.——Enos Sheet Holder Co. began erection of factory, foundry, and power house, 125 x 45, 45 x 75, and 40 x 25 feet, respectively.——Fire damaged stock room of F. M. Shaw & Co.'s shoe factory. *May.* Joseph S. Needham, cider manufacturer, died. *June.* W. P. Clark & Co., leather, dissolved; in August, A. W. Clark started shop to continue the business.——E. E. Stevens & Co. built addition to plant. *July.* Cider mill of E. A. Needham destroyed by fire; not rebuilt.——Fred M. Shaw & Co. retired from business and sold plant to Bowers & Shaw; latter firm started August 1.——F. P. Osborn succeeded to cut stock business of Prescott, Osborn, & Co. *August.* National Calfskin Co. added new boiler.——Finishing

department of Franklin Osborn Co.'s leather factory shut down indefinitely. — Business of Alexander B. Clark, sheepskins, incorporated as the A. B. Clark Co.; authorized capital, $500,000. *September.* Danvers Bleachery & Dye Works shut down one week for repairs. — National Calfskin Co. began erection of addition, 6 stories, 180 x 60 feet. — E. F. Mulholland, treasurer A. B. Clark Co., died. — Calvin J. Larrabee, morocco, sold to J. E. Osborn & Co. *October.* Sheepskin factory of Geo. E. Hayes & Co. destroyed by fire and morocco factory of Geo. M. Hayes & Son damaged by fire. — Fred. M. Page & Co., linings, etc., moved to Lynn. *November.* After a season of curtailment, tannery of Franklin Osborn Co. shut down indefinitely; windows were boarded up and belts removed from machinery. — Rice & Hutchins leased currying shop of Leverett Poor for purpose of manufacturing split leather for their various shoe factories. *December.* Massachusetts Glove Co. moved here from Salem. *During the year,* Southwick & Hackett erected new building and began manufacture of cider.

Pelham. In November, steam sawmill of L. W. Dillon destroyed by fire.

Pepperell. In September, Pepperell Card & Paper Co. began on addition, 200 x 14 feet, to west side of mill. *October.* Henry A. Parker added new boiler to his paper mill. *December.* Gregory, Shaw, & Co., shoes, shut down plant permanently; no successor.

Peru. In December, the Mill Brook Mining Co. organized in Pittsfield to develop a supposed gold mine in this town; incorporated under laws of New Jersey and $100,000 authorized as capital stock; the company secured 50 acres of land and began mining.

PITTSFIELD. In January, E. D. Jones Son's Co. shipped eight engines to Japan. — Stanley Electric Manufacturing Co. incorporated under laws of New Jersey with an authorized capital of $2,000,000; the company shut down a few days for inventory. — Taconic Mills started up in part. — Berkshire Manufacturing Co., overalls, etc., increased its capital stock $20,000. — Pomeroy Mill damaged by fire.

February. Musgrove Knitting Co. increased capital stock $10,000 and began on enlargement of plant. — Taconic Mills shut down temporarily on account of lack of stock.

March. Musgrove Knitting Co. and Helliwell Manufacturing Co. added new machinery.

April. H. W. Clark Manufacturing Co., cigars, moved into larger quarters. — New company formed to operate shoe factory of O. W. Robbins Co.; authorized capital, $50,000, a decrease of $50,000 from authorized capital of old concern. — Eaton-Hurlbut Stationery Co. began erection of addition to factory, 2 stories, 50 x 200 feet; completed in June. — S. N. & C. Russell Manufacturing Co. began foundation for addition to dyehouse.

June. A. H. Rice & Co., silk goods, shut down for repairs and inventory. — Stanley Electric Manufacturing Co. shut down one day on account of accident to power motor. — Osceola Manufacturing Co. incorporated to manufacture textiles, with authorized capital of $25,000.

July. H. W. Clark Manufacturing Co. shut down one week for vacation. — Smith-Hadley Shirt Co. shut down one month for stock taking. — Helliwell & Co., woollens, shut down for stock taking. — The so-called Barkerville Mill property and certain other real estate in that section of the city transferred to the new corporation, Osceola Manufacturing Co. The mills had not been run for years, and the upper mill, in its day a valuable plant, had been allowed to deteriorate. — Pittsfield Shoe Stock Co. shut down indefinitely. — S. N. & C. Russell Manufacturing Co. added 2 new spinning machines.

August. Berkshire Tack Co. shut down indefinitely; resumed in October. — Taconic Mills shut down in all departments owing to dull trade; later, resumed.

September. Collins Mill and Tillotson Mill shut down on account of the death of Mrs. D. M. Collins. — S. N. & C. Russell Manufacturing Co. added new boiler. — Pontoosuc Woollen Co. began erection of addition to mill; drug room addition completed. — W. E. Tillotson began erection of new office building, 2 stories, 21 x 21 feet. — Hamilton Gold Mining Co. began excavating. — Carding and spinning rooms of Taconic Mills shut down owing to accumulation of stock. — Pontoosuc Mills installed electric lighting system; later, shut down in part one week owing to dulness of some lines of goods and dedicated newly erected weave shed with a dance.

November. Cheshire Shoe Manufacturing Co. and O. W. Robbins Co. shut down 2 weeks for stock taking. — Pontoosuc Mills shut down for 3 weeks. — James C. McGowan, proprietor Oriental Silk Thread Co., a new concern, added machinery to spool black silk thread. — Massachusetts Steam Wagon Co. formed to manufacture what had been known as the Cunningham steam wagon or truck. — D. M. Collins & Co., knit goods, shut down for stock taking.

December. J. L. & T. D. Peck Manufacturing Co. began on addition to storehouse, 40 x 97 feet, at lower mill, and added new boiler to upper mill. —— Stanley Electric Manufacturing Co. shut down for stock taking. —— Helliwell Mills shut down for stock taking.

Plymouth. In January, Standish Worsted Co. installed electric light plant; in February, completed new weave shed and installed new looms; in May, purchased new building and equipped it for manufacture of woollens; in July, incorporated under Massachusetts laws with capital stock of $240,000, divided into 2,400 shares of $100 each. *July.* Puritan Mills shut down for 5 weeks; replaced carding and spinning machinery with looms. —— George Mabbett & Sons began manufacturing woollen cloth.

Princeton. In May, Mineral Tanning Co. succeeded by Paul A. Pouppeville.

QUINCY. In February, boat building establishment of John Stuart destroyed by fire. *March.* Most of the granite quarries passed into the control of a syndicate to be known as the Quincy Granite Quarries Co. and include Quincy Quarry Co., Berry Bros., John Cashman, Prout Bros., Milne & Chalmers, W. R. Thomas, John Fallon & Sons, Field & Wilde, G. H. Hitchcock & Co., G. S. Patterson, Gold Leaf Quarry Co., Craig & Richards, Lewis Dell & Co., Carr & Spear, McKenzie & Patterson, Blue Hill Granite Co., Lyons Granite Co., and O. T. Rogers Granite Co.; the capitalization was placed at $1,750,000. —— Columbia Granite Co. sold plant and business to John McQueen. *April.* Prout Bros. engaged in manufacture of monuments after sale of quarry; later, shut down 2 months. —— All of the granite manufacturers shut down 2 months on account of labor difficulty. *May.* Fore River Engine Co. purchased 50 acres of land along the Weymouth Fore River at Quincy Point and Quincy Neck for purpose of erecting large shipbuilding plant; foundations were started for 4 buildings, 600 x 80, 600 x 80, 800 x 100, and 400 x 180 feet, respectively; harbor to be dredged 25 feet at low tide and to have a concrete bottom.* *August.* Work suspended temporarily in the majority of the quarries owing to the extreme heat. ——John F. Merrill Co. incorporated to manufacture shoes; authorized capital, $5,000. *September.* United States Standard Scale Co. began manufacture of slot weighing machines.

Randolph. In February, Hagerty & Sullivan dedicated their new shoe factory addition. *November.* Merchandise in factory of Tileston Bros. Shoe Co. sold at auction.

Reading. In December, Oliver-Whiteman Shoe Co. shut down indefinitely.

Revere. In June, Anthony & Laskey began manufacture of shoes.

Rockland. In March, C. E. Lane, shoes, shut down permanently; no successor. *April.* Hub Gore Co. shut down on account of dull trade. —— S. E. Packard & Son of Brockton purchased plant of Nesmith Paper Box Co. and continued operations. —— Geo. W. Hall, shoes, shut down for 2 months. *June.* Chas. H. Dill, retired shoe manufacturer, died, aged 86 years. *August.* Gideon Studley began erection of new box factory to replace one destroyed by fire, 2 stories, 80 x 195 feet; completed in December. *November.* Fred F. Prior Co. incorporated; authorized capital, $6,000; to manufacture stays, etc.; later, added machinery to re-make old shoes by adding new bottoms, after which they were treed and finished.

Rockport. In February, Tarr's Isinglass Factory shut down for the season.

Russell. In January, the glove factory of W. B. Shelley destroyed by fire. *December.* Blandford Brick & Tile Co. completed repairs on plant.

SALEM. In January, John J. Connolly, Cass & Daley, and Cole & Woodbury, shoes, moved into larger quarters. —— Young & Sampson, counters, increased capacity. —— Morrill Leather Co. began on addition to plant. —— Chas. P. Buckley, innersoles, moved here from Lynn. —— Solo Leather Co. began manufacturing. —— Sachem Shoe Co. leased plant to make, sell, and repair fine shoes; in June, went out of existence and machinery moved to Lynn. ——J. A. Lord and Young & Sampson shut down owing to accident to ma-

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* See Battle Ship Construction in Massachusetts, page 55.

chinery. *March.* John M. Anderson, retired soap manufacturer, died, aged 88 years. —— Storehouse of E. F. Bell & Co., shoes, damaged by fire. —— Massachusetts Glove Co. moved here from Danvers; in December, moved to Peabody. *April.* Mills 1 and 3 of Naumkeag Steam Cotton Mills shut down on account of accident to engine. *May.* N. P. Gifford began erection of new factory for use of W. A. Irving, box manufacturer. —— Michael Kelley began repairing Nichols factory for occupancy as a morocco shop. —— Warren Page of Warren Page & Co., shoe stock, died. —— Fire damaged barrel factory of H. & H. O'Donnell. *June.* Fire damaged plants of J. A. Lord, leather stiffenings, and Chas. H. Carey & Co., heels. *July.* Naumkeag Steam Cotton Mills shut down one week for repairs. —— Essex Shoe Co. began manufacture of shoes. *August.* Gierger & Brenning began manufacture of motors for automobiles. —— Naumkeag Steam Cotton Mills shut down one week for repairs. *September.* Cass & Daley added men's shoes to product. —— P. Lennox & Co., leather, shut down 4 weeks. *October.* Fire destroyed morocco factory of Christopher Carter. *November.* Fire damaged cotton waste room at Naumkeag Steam Cotton Mills. —— Leonard Shoe Co. incorporated; authorized capital, $15,000.

Sandwich. In August, fire damaged old Cape Cod Glass Co.'s plant which had been idle for some time past.

Saugus. In November, F. Scott & Son, woollen goods, installed new looms.

Scituate. In May, E. O. Stoddard, shoes, retired from business; no successor.

Sharon. In October, factory property of Geo. R. & W. R. Mann sold to New Century Roll Screen Co.; repairs and improvements begun; manufacturing to begin after January 1, 1901.

Shelburne. In March, Thos. W. Mayhew, retired silk manufacturer, died at Paterson, N. J., aged 70 years. *April.* American Metallic Casket Co. set up last of its machinery; in August, purchased a building to use as storehouse and began work on addition to plant. *June.* Lamson & Goodnow Manufacturing Co. shut down for stock taking and repairs; in December, shut down 2 weeks for vacation. *July.* Bickel Manufacturing Co. incorporated to manufacture improved bicycle pedal and wrench and began fitting up quarters in old silk mill building.

Shirley. In January, S. Gould, shoddy, moved here from West Boylston, and in May became incorporated under Massachusetts laws as Gould Manufacturing Co.; authorized capital, $10,000. *June.* Samson Cordage Works began on addition, 2 stories, 100 x 90 feet; in August, shut down braiding room for 2 weeks; later, finishing and store rooms damaged by fire; in November, picker room damaged by fire. *August.* C. A. Edgarton Manufacturing Co. began on addition to boiler and engine room.

Shrewsbury. In February, Green & Hickey Leather Co. incorporated; authorized capital, $75,000.

Somerset. In May, Mount Hope Iron Co. shut down for 2 weeks; in June, shut down for stock taking; in November, shut down one week; and in December, shut down for 2 days. *August.* All foundries shut down temporarily on account of the excessive heat. *October.* Somerset Fire Brick & Tile Co. incorporated under New Hampshire laws; authorized capital, $125,000. *December.* Somerset Foundry Co. shut down one week for vacation.

SOMERVILLE. In January, Martin W. Carr began foundation for box factory, 58 x 40 feet, 3 stories. —— New England Glass Co.'s plant destroyed by fire. *February.* J. D. Campbell, proprietor of National Plating Works, Boston, died. *During the year,* Cushman Bros. & Co., curtains, fixtures, etc., shut down. —— Birch Bros. added room for drafting department and connected various parts of works by telephone; also, added new boiler.

Southborough. In March, Cordaville Woollen Mill installed new felt department and, during the year, added new machinery and improved the plant generally.

Southbridge. In March, Central Mills shut down temporarily on account of accident to machinery. *May.* Southbridge Manufacturing Co., shoe tools, discontinued business; no successor. *June.* Work begun on clearing land for erection of box factory for Providence, R. I., capitalists. *July.* Southbridge Printing Co. shut down owing to dull trade. —— Central Mills Co. added new machinery. —— Litchfield Shuttle Co. added new machinery. *December.* American Optical Works began on addition to its glass factory.

South Hadley. In July, Hampshire Paper Co. shut down for repairs. *August.* Carew Manufacturing Co. shut down for one week; later, shut down for 2 weeks. *December.* Mills of Glasgow Co. shut down entire year.

Spencer. In May, Beebe, Webber, & Co., woollen goods, shut down on account of accident to machinery. *June.* E. F. Sibley, shoes, and Brookfield Counter Co. burned out; in July, Sibley retired from business with no successor, and in the same month Brookfield Counter Co. was succeeded by the Columbia Counter Co. and business moved to South Boston. —— Ebenezer Howe, boxes, shut down; in September, sold to Henry Howe. *July.* Green & Green, underwear, moved to Worcester. —— The Red Mill recently sold to Newton Darling, again sold by auction and bid in by F. S. Pratt. *September.* Isaac Prouty & Co., shoes, shut down until new run was ready. *October.* Nipmuc Paper Box Co. burned out and leased new plant. —— Work begun on artesian well for Ne Plus Ultra Yeast Co. and new factory occupied. —— Fire destroyed coal shed of Isaac Prouty & Co. —— Spencer Textile Co. leased plant and set up machinery; began operations in November. *November.* Spencer Wire Co. damaged by fire. *December.* Isaac Prouty & Co. shut down over holidays. —— Dufton Bros.' Westville Mill damaged by fire. —— Lorenzo Watson, pioneer in boot industry in Spencer, died, aged 82 years.

SPRINGFIELD. In January, Waltham Watch Tool Co. moved into its new building. —— Boston Insole Co. went out of business; no successor. —— P. R. Wagor of P. R. Wagor & Co., wire workers, withdrew from active management of the business, which was continued under the name of The P. R. Wagor Manufacturing Co.; in August, Mr. Wagor died. —— Fire damaged plant of Dickinson Hard Rubber Co.

February. Knox Automobile Co. reorganized with capital stock of $50,000; began manufacturing in March.

March. Indian Orchard Co. broke ground for addition to plant, 214 x 75 feet, 5 stories, with picker room, 50 x 65 feet, one story.

April. Ground broken for erection of addition to the collar factory of the M. & M. Manufacturing Co., 45 x 45 feet.

May. Springfield Knitting Co. bought entire plant and machinery of Alaska Knitting Co.; later, began construction of 2 additions to mill, 3 stories, 100 x 50 and 20 x 35 feet, respectively.

June. Springfield Webbing Co. began on erection of new weave room, one story, 42 x 105 feet, and added new looms. —— Meyer Thread Co. incorporated; authorized capital, $500,000; succeeded to business of Whitcomb Winding Co. formerly of Holyoke.

July. Smith & Wesson, revolvers, shut down 3 days for vacation. —— Bliss Charcoal Stove Co. organized to manufacture a charcoal stove or broiler, the invention of Mrs. A. L. Bliss. —— Indian Orchard Co. increased capital stock $125,000. —— Hodges Fibre Carpet Co. leased part of Indian Orchard Co.'s new mill to increase their capacity. —— Planet Manufacturing Co. increased its capital stock $5,000. —— Church & Richards, cotton yarn, succeeded by Fred. G. Richards.

September. The following city ordinance went into effect:

Section 1. In the city of Springfield the emission into the open air of dark smoke or dense gray smoke for more than two minutes continuously, or the emission of such smoke during 12 per cent of any continuous period of 12 hours, is hereby declared a nuisance.

Section 2. Whoever commits such nuisance or suffers the same to be committed on any premises owned or occupied by him, or in any way participates in committing the same, shall be punished by a fine of not more than $100 for each week during any part of which such nuisance exists.

Section 3. The mayor of the city shall designate some proper person among the officers of the city, who shall be charged with the enforcement of this law. Such designation shall be made in January of each year, but shall be subject to change at any time.

Section 4. The officer so designated may apply to the supreme judicial or superior court or to any justice thereof for an injunction to restrain the further operation of any furnace, steam boiler or boilers which are being operated in such a manner as to create

a nuisance as herein defined; and said court or justice may after hearing the parties enjoin the further operation of any such furnace, boiler or boilers.

Section 5. This act shall take effect on the first day of September, in the year 1900.

October. Confectioners' Machinery & Manufacturing Co. incorporated under Delaware laws with authorized capital of $200,000, half in common and half in preferred stock; the product to be a candy machine known as the "Mogul." —— Moore Drop Forging Co. organized with authorized capital of $25,000, location secured for new plant, and work of construction begun. —— Indian Orchard Co. began erection of new boiler house, one story, 40 x 40 feet. —— Goessman Parchment Co. incorporated; authorized capital, $200,000. —— John H. Rodgers, carriage manufacturer, died, aged 60 years.

November. Sawmill of Chas. A. Bartholomew partially destroyed by fire.

December. S. P. Burgess, boxes, sold to the Burgess Paper Box Co. —— Fire damaged cigar factory of Thos. H. Kelley. —— Plants of Golden Spring Hook & Eye Co. and C. W. Mutell Manufacturing Co., regalias, not operated entire year.

Stockbridge. In March, paper mill of Chas. E. Callender destroyed by fire; not to be rebuilt.

Stoneham. In March, T. H. Jones Co., shoes, added new machinery. *June.* L. V. Colahan & Co. incorporated under Massachusetts laws to manufacture shoes; authorized capital, $10,000.

Stoughton. In April, Alanson Belcher, shoe manufacturer, died. *October.* James Hill, retired boot manufacturer, died, aged 70 years. *November.* Foss & Co., shoddy, disposed of their property to the Stoughton Mills.

Sturbridge. In January, Fiskdale Mills added 2 new engines and electric light plant; in August renovated spinning frames and set up new spoolers.

Sudbury. In August, J. B. Pierce of Buffalo, N. Y., purchased 90,000 feet of land for purpose of erecting mill for manufacture of cotton mill woodenware.

Sutton. In May, Dudley Shuttle Co. began erection of new boiler and engine house.

Swampscott. In October, Henry Alberts, shoes, moved to Lynn.

TAUNTON. In January, Taunton Rivet Works began on addition to plant. —— Cohannet Mill added new engine. —— Engine at Taunton Locomotive Works damaged by explosion. *February.* Taunton Iron Works shut down on account of accident to engine. *March.* Lincoln & Wood shipped twist drills to Honolulu. —— Mason Machine Co. shut down on account of accident to machinery. *April.* Atlas Tack Corporation added new packing machines. —— Estate of F. W. R. Emery, blank books, succeeded by Emery Record Preserving Co. —— A. B. Staples, bricks, went out of business; no successor. *June.* The new Winthrop Mill ran off its first cotton on the 14th. *July.* Eldridge & Co., casket hardware, absorbed by American Silver & Casket Co., organized under New Jersey laws, with authorized capital of $500,000. *August.* Taunton Iron Works installed new boiler. —— The several foundries compelled to shut down temporarily on account of the heat. *October.* New Winthrop Mill in full operation. —— Elizabeth Poole Mills ran on three days' time. —— Massachusetts Pearl Works began operations. —— Fire damaged plant of American Smelting & Refining Co., formerly the Phœnix Crucible Works, and cabinet factory of Benj. F. Cunningham. *December.* Rebuilding of burned crucible works begun. —— Whittenton Mills shut down for 3 days' vacation.

Templeton. In October, Brown, Bradley, & Co., chairs, shut down on account of accident to boiler.

Tewksbury. In May, buildings and machinery of Atherton Machine Co. sold at auction. The business of the Atherton Machine Co. was originated by Mr. Wm. E. Whitehead, now deceased, who came to this country from Miles Platten, England, and became one of the most resourceful inventors of special cotton machinery of his day, and the organizer of the manufacture of same. Later he associated with himself Mr. A. T. Atherton of Lowell, then a patent lawyer, forming the firm of Whitehead & Atherton. Starting with a limited capital, in a small shop in Lowell, the firm rapidly developed a very large business in cotton picking machinery, in fact, taking the lead in the business world

in this specialty. Finding their quarters in Lowell inadequate to their growing business, they purchased a large tract of land in Tewksbury upon which was begun the erection of the present immense plant occupied by the Atherton Machine Co. Soon after moving to Tewksbury the firm was incorporated as the Whitehead & Atherton Machine Co., and after the death of Mr. Whitehead, in 1884, the property was sold to the Atherton Machine Co., incorporated under the laws of Massachusetts for the purpose of purchasing the plant. Its capital was $300,000. In 1887 Mr. A. A. Coburn of Lowell, then the largest stockholder in the company, took charge of the concern and practically became the manager of the company and its business. From this time until August, 1893, when the financial and business depression enveloped the country, the Atherton Machine Co. was highly successful. In 1895, several unfortunate financial losses, largely outside the regular channels of the company's business, crippled its credit to such an extent that it was forced into insolvency in July, 1898.

Townsend. In February, new steam lumber and stave mill of A. D. Fessenden dedicated.

Uxbridge. In January, Edwin Whitin purchased the Capron Woollen Mill. *February.* C. A. Root & Co., cotton worsteds, began manufacturing. *March.* Calumet and Hecla Woollen Mills shut down temporarily on account of high water. *July.* Hecla Mill shut down temporarily. —— Fire damaged picker room of Capron's Mill. *September.* Uxbridge Cotton Mill let contract for addition to be built between Uxbridge and Whitinsville. *During the year,* the Uxbridge Cotton Mill added new spindles, looms, and cards. —— Ironstone Mill closed entire year and advertised for sale. —— The Capron Mills operated by Norfolk Woollen Co. of Franklin.

Wakefield. In May, cane-cutting factory of Heywood Bros. & Wakefield Co. destroyed by fire; rebuilt. *July.* Fire destroyed factory of Wakefield Reed Chair Co.

Walpole. In May, Walpole Dye & Chemical Works sold at auction. *June.* Fire destroyed building of Massachusetts Chemical Co.; rebuilt. *July.* Walpole branch of the American Card Clothing Co. closed and the Walpole Card Clothing Co. incorporated; authorized capital, $15,000. *August.* Waterproof paper department of F. W. Bird & Son destroyed by fire; rebuilt. *October.* Walpole Card Clothing Co. added 2 new water wheels; in operation in November.

WALTHAM. In January, fire damaged machine shop of F. C. Gifford and the plant of Waltham Electrotyping Co. —— American Waltham Watch Co. shut down 3 days for stock taking. *February.* Addition to New England Motor Carriage Co.'s factory completed. *May.* S. A. Arneson Organ Co. began equipping factory to manufacture organs. *July.* American Waltham Manufacturing Co., bicycles, cut down its force on account of dull trade. —— American Waltham Watch Co., United States Watch Co., Columbia Watch Co., Judson L. Thompson Manufacturing Co., and Godber Jewel Co., shut down 2 weeks for vacation. —— Davis & Farnum Manufacturing Co. shut down temporarily on account of excessive heat. *August.* Boston Manufacturing Co., cotton goods, shut down 2 weeks for curtailment of production. —— All factories shut down for muster day. —— American Waltham Watch Co. and O'Hara Dial Co. shut down temporarily on account of the heat. —— New England Motor Carriage Co. sold to Waltham Motor Carriage Co.; in November, resold to Stanton Manufacturing Co. who combined the business with their own. *September.* Boston Manufacturing Co. shut down one week for repairs. —— American Watch Tool Co. added new engine. *December.* American Waltham Watch Co. shut down for holidays.

Ware. In February, mills obliged to shut down on account of high water. —— Geo. H. Gilbert Manufacturing Co. added machinery to worsted spinning department; in July, shut down on account of accident to machinery. *July.* Otis Company added new battery of boilers; in August, shut down in part owing to lack of power.

Warren. In January, Thorndike Co. equipped No. 4 mill with machinery for manufacture of stockinet; in April, added more machinery; in May, began erection of new cloth room and storehouse; in September, shut down for repairs; in November, added new water wheel; in December, shut down on account of ice getting into water wheel. —— Torkelson Manufacturing Co. shut down on account of accident to machinery; in December, shut down for holiday vacation. *November.* Sayles & Jenks Manufactur-

ing Co. shut down on account of dull trade; in December, shut down a second time for same reason.

Watertown. In May, Falcon Worsted Co. leased 20 looms and began manufacturing. *October.* Bemis Mills shut down indefinitely. —— Hood Rubber Co. began on addition to factory, 4 stories, 80 x 100 feet; later, increased capital stock to $750,000; in December, shut down for 10 days.

Wayland. In May, Caswell Bros. succeeded by Caswell Shoe Co. incorporated; authorized capital, $7,000. *September.* Shoe factory of R. C. Dean destroyed by fire.

Webster. In February, mills were generally shut down on account of high water. —— Eben S. Stevens of Quinnebaug, Conn., began erection of new woollen mill, 2 stories, 90 x 90 feet; completed in July. *March.* L. D. Perry, woollen yarn, added new cards; in September, began erection of new mill and other buildings as follows: yarn mill, 120 x 80 feet; picker house, 30 x 40 feet; and boiler house, 40 x 20 feet. *August.* H. N. Slater Manufacturing Co., cotton goods, shut down for repairs; in December, added new spindles and looms. *October.* A. J. Bates & Co., shoes, began on addition and improvements to factory.

Wellesley. In May, R. T. Sullivan Co., wool extracts, completed new dry house.

Wendell. In June, Farley Paper Co. shut down for repairs on mill and dam. *July.* Orange Knitting Co. shut down 2 weeks for vacation.

Westborough. In September, Geo. B. Brigham & Sons shut down cutting department for one week. *November.* F. W. Forbes, retired sleigh manufacturer, died.

West Boylston. In January, S. Gould, shoddy, moved machinery to Shirley. *February.* Clarendon Mills completed removal of machinery to its new mill at West Peterboro, N. H.

West Bridgewater. In January, A. S. Lyons began operations with a new sawmill purchased in Vermont; in April, totally destroyed by fire. —— Sawmill of Daniel B. Davis damaged by fire. *October.* Chas. E. Tisdale & Co., shoes, shut down 2 days for vacation.

West Brookfield. In July, Olmstead-Quaboag Corset Co., owing to increase of business, leased vacant Wood shoe factory; in August, shut down for stock taking. *August.* Standard Fishing Rod Co. formed; leased plant and began equipping for manufacturing; first shipment of product made in October; in December, shut down for holiday vacation.

Westfield. In January, W. Warren Thread Co. began erection of addition, 3 stories, 50 x 165 feet; in December, began on another addition, 3 stories, 50 x 160 feet. *February.* Hial Holcomb, retired whip manufacturer, died, aged 82 years. *March.* Dewitt C. Sackett, cigar manufacturer, died, aged 57 years. *June.* Solar Paper Co. went out of business and was succeeded by the Columbian Paper Co., a combination of the Solar Paper Co. and the Western Photo Paper Co. of Chicago. *July.* Emmons Howard, organ manufacturer, purchased good will and name of the Johnson & Son organ business. —— The American Cabinet Hardware Co. and Textile Manufacturing Co. absorbed by the American Silver & Casket Co., a new combination comprising the above companies and the following: Eldridge & Co., Taunton, Mass.; Strong Manufacturing Co. and Morgan Silver Plate Co., Winsted, Conn.; Westfield Plate Co., Thompsonville, Conn.; and Grilley Co. and United States Casket Hardware Co., New Haven, Conn.; incorporated under New Jersey laws with authorized capital of $500,000. —— H. B. Smith of H. B. Smith Co. died, aged 83 years. *September.* Owen Rockwell died, aged 86 years; he was one of the veteran powder manufacturers of Western Massachusetts. *December.* James C. Alden, formerly a woollen goods manufacturer in Westfield, died in Providence, R. I., aged 55 years.

The Westfield Board of Trade gave notice of a meeting to be held after the first of the year to consider a communication received from the American Bicycle Co. relative to the plant of the Lozier Manufacturing Co. This company was anxious to obtain the deeds of the plant which were held by the Board of Trade in the interest of the subscribers, who had contributed a large sum to bring the Lozier bicycle business to Westfield. The contract between the Lozier company and the Board of Trade has 2½ years to run. The

proposition was that the deeds of the property be turned over to the American Bicycle Co. which wrote, in substance, as follows: "Upon the delivery of the deeds we will build, with due diligence, an addition, or additions, having a total floor space of not less than 30,000 square feet, and to cost not less than $15,000, and will, to the best of our ability and so far as good business will permit, equip and operate the factory for manufacturing purposes for three years from the first day of January, 1901; and will not, for the period of four years next ensuing from January 1, 1901, sell the property; with the understanding that so fast as the addition or additions are constructed the deposit of $15,000 may be drawn upon on account of the erection, in manner and form as in the case of the construction of the original plant."

Westford. In April, Allan Cameron died, aged 77 years; in 1858, Mr. Cameron came to this town and bought an interest in the Abbot Worsted Co. forming a partnership with John Abbot which connection continued to the time of his death; in October, the company was changed from a private firm to a corporation with an authorized capital of $600,000, with the sons of the two partners as principal incorporators.

Westhampton. In November, W. H. Lyman leased his sawmill to the Columbian Specialty Co. of Easthampton.

West Newbury. In January, West Newbury Co-operative Creamery began operations. *September.* S. C. Noyes & Co., combs, and Wm. R. Chaplin, shoes, shut down one day for vacation. *November.* S. C. Noyes & Co. shut down for election day and for the Thanksgiving holiday season.

Weston. In June, Thomas Faber & Son, sash cord, retired from business; no successor.

Weymouth. In February, Benj. S. Lovell, president of the John P. Lovell Arms Co., died, aged 56 years. *July.* M. Sheehy & Co., shoes, shut down one week. *August.* E. H. Stetson & Co. succeeded by Stetson Shoe Co., Incorporated; authorized capital, $40,000. *December.* Fireworks factory of Edmund S. Hunt & Sons damaged by fire and explosion.

Whitman. In January, Commonwealth Shoe Co. added women's shoes to product. —— L. C. Bliss & Co. shut down at close of season's run for a few days. *April.* United States Shoe Co. shut down one week. *June.* Old Colony Boot & Shoe Co. shut down one week for stock taking. *September.* L. C. Bliss & Co. began on addition to be used as last department. *October.* Atwood Bros. installed new boiler in their box factory.

Wilbraham. In December, Collins Manufacturing Co., paper, shut down for repairs.

Williamsburg. In February, Haydenville Co. began erection of new melting furnaces; in July, installed new boiler; in December, shut down for stock taking. *November.* Hill Bros.' button shop shut down for repairs.

Williamstown. In January, Williamstown Manufacturing Co. shut down owing to accident to main shaft; in September, fire damaged picker room. *February.* Local mills shut down temporarily on account of high water. *August.* Boston Finishing Co. shut down in part; in September, shut down for one week; later, shut down on account of accident to machinery; in October, began on addition to be used as a dye room, one story, 66 x 64 feet; new engine also installed.

Winchendon. In August, White Bros., cotton goods, began on erection of new mill.

Winchester. In November, United Shoe Machinery Co. began erection of new factory, 300 x 80 feet, for manufacture of drop forgings and other heavy work.

Winthrop. In January, S. Payne & Co. discontinued currying leather; no successor.

WOBURN. In April, new currying shop of Beggs & Cobb completed. *September.* Freeman A. Loring died; he formerly operated the Bryant & King tannery, retiring from business in 1895. *November.* James Robertson bought the Pollard factory and began manufacture of leather. —— N. J. Simonds, retired manufacturer of counters, died.

WORCESTER. In January, the Eastern Bridge and Structural Company organized under Massachusetts laws; authorized capital, $75,000; leased plant and began operations. —— James H. Whittle began excavating for addition to his machine shop, 3 stories, 50 x 160 feet. —— L. A. Hastings, harnesses, incorporated as L. A. Hastings Co. —— Stockholders of Worcester Optical Company voted to increase their holdings and subscribe funds for enlarging the plant and adding new machinery; in July, plant shut down indefinitely owing to business complications. —— Parker Hat Company incorporated; authorized capital, $5,000.

February. Harrington & Richardson Arms Company began manufacture of guns, a branch which they abandoned in 1886 to confine themselves to the manufacture of revolvers. —— Sherman Envelope Co. moved into larger quarters. —— Abraham Burlingame died, aged 58 years; he was proprietor of the Burlingame Engine Works and inventor of the Burlingame pulley and engine. —— Edward H. Stark died, aged 71 years; he was one of the oldest boot manufacturers in Worcester; in 1863 he opened a small shop with his brother as partner and increased the business, retiring about two years ago. —— Fire damaged plants of National Biscuit Company and Hamblin & Russell Manufacturing Company, wire goods.

March. A number of local mills and factories compelled to shut down for different periods on account of high water. —— Queensbury Mills began removing its machinery from Hudson to a plant at South Worcester; company manufactured worsteds and moved 3 years ago from Sanford, Maine, to Hudson manufacturing as the Hudson Spinning Co.; a corporation purchased the business and organized as the Queensbury Mills Co. —— National Biscuit Co. decided to discontinue manufacturing in this city. —— Morris Cohen, wrappers, fined for running plant on Sunday. —— Wachusett Mills Co. began operations with 25 looms. —— John C. Otis died; he was president and treasurer of the Union Water Meter Co.

April. Ætna Knitting Co. occupied new quarters. —— Worcester Machine Screw Co. with the Chicago Screw Co. and Detroit Machine Screw Co. absorbed by a combination known as Standard Screw Co.; incorporated under New Jersey laws; authorized capital, $1,500,000. —— Washburn & Moen branch of American Steel Wire Co. shut down 3 days. —— Washburn Wire Co. incorporated under Maine laws; authorized capital, $1,500,000. —— New factory, 3 stories, 40 x 160 feet, begun for occupancy by Vocalion Organ Co. —— A. Burlingame Co. incorporated from private firm of A. Burlingame & Co.; authorized capital, $20,000. —— Fire damaged dry house of Baker, Ricketson Co.'s factory twice; knife factory of L. Hardy & Co.; and dressmaking establishment of M. E. Burnes.

May. Washburn & Moen began erection of addition to wire works, one story, 60 x 100 feet. —— Harrington & Richardson Arms Co. began erection of addition for manufacture of new gun recently put on the market; one story, 50 x 60 feet. —— Worcester Carpet Co. shut down for stock taking. —— Gilman & Moffett succeeded C. A. Moffett, candy manufacturer; in July, moved into larger quarters.

June. Worcester Brewing Co. installed a 150 ton ice refrigerating plant, and new boiler. —— The Locomobile Co. of America leased the balance of building partially occupied and the former occupants removed. —— Washburn & Moen shut down for the summer months. —— Junction Foundry Co. began manufacturing in plant formerly run by A. B. Davidson who retired from business in May, 1899.

July. Massasoit Knitting Co., of Spencer, leased quarters and began removal of plant to this city. —— N. A. Lombard & Co. incorporated under Massachusetts laws; authorized capital, $20,000; to manufacture woollen machinery. —— Wright & Colton Wire Cloth Co. shut down one week for repairs. —— The United States Lunch Wagon Co. bought out the T. H. Buckley Lunch Wagon & Catering Co., thus controlling the lunch wagon business of the United States and Canada. —— Fire destroyed drop forging shop of Locomobile Co. of America. —— John R. Scott, woollen goods, shut down 3 weeks; in December, shut down 10 days.

August. Merrick D. Marcy died, aged 68 years; he was for many years a manufacturer of spinning rings but had retired. —— Fire damaged dyehouse of Charles W. Crough.

September. Southgate Woollen Co. shut down during month.

October. Clarendon Counter Co. incorporated; authorized capital, $5,000; to manufacture shoe counters, as successor to C. H. Clarendon.

November. Curtis Manufacturing Co. began addition to plant. —— Morgan Spring Co. began erection of new factory, 2 stories, 140 x 40 feet. —— Charles Case Shoe Co. incorporated under Massachusetts laws; authorized capital, $28,000; to manufacture men's and women's shoes. —— Fire slightly damaged plant of Bay State Shoe & Leather Co. —— George L. Allen died, aged 47 years; he was a member of William Allen & Sons, builders of steam boilers.

December. Parisian Wrapper Manufacturing Co. shut down owing to business complications. —— The Natural Food Company organized with authorized capital of $10,000,000. This company becomes the licensee of the Worcester plant of the Shredded Wheat Co. Until the new factory, which will be located at Niagara Falls, N. Y., is completed, the shredded wheat biscuits are to be made at Worcester; after that, the Worcester plant may be devoted to the manufacture of the machinery used in preparing the food products made by the Natural Food Co. as well as the biscuit. The plan of the deal made comprehended that the stockholders in the Shredded Wheat Co. were to be granted a yearly dividend of 8 per cent for 13 years, which is the corporate life of the company; at the close of this term of years, the capital stock of $1,400,000 will be bought for cash, the stockholders receiving par for their holdings. —— Silas Garfield died, aged 68 years; he was one of the founders of the Washburn & Garfield Manufacturing Co., manufacturers of steam, water, and gas pipe and fittings. —— Mill of the Southgate Woollen Co. destroyed by fire; rebuilt. —— Fire damaged plant of Stewart Specialty Manufacturing Co., makers of cardboard photograph cases. *During the year*, the Wachusett Thread Co. increased capital stock $50,000 and installed new machines.

THE STATE. As in past years, the preceding chronology has been prepared from information supplied by manufacturers, and from other sources. It includes the more important events affecting the conduct of the industrial enterprises of the Commonwealth. Returns are made from 211 cities and towns as against 224 cities and towns reported in the volume for 1899.

In the following summary will be found a statement of the principal industrial events arranged by subjects and industries. The proper method of reading the table is as follows: In 1900, there were 156 instances of new firms or industries established in the several cities and towns; of these, three were established to manufacture artisans' tools; 52 for the manufacture of boots and shoes; 7, clothing; 5, cotton goods, etc. There were 119 new buildings constructed during the year, 6 for firms engaged in the manufacture of boots and shoes; 16, cotton goods; 15, woollen goods, etc. Other lines may be read in a similar manner.

Classification of Subjects and Industries.	Number	Classification of Subjects and Industries.	Number
New Establishments, etc.	156	**New Establishments, etc.**-Con.	
Artisans' tools,	3	Leather,	5
Boots and shoes,	52	Machines and machinery,	10
Boxes, barrels, kegs, etc.,	1	Metals and metallic goods,	11
Brick, tiles, and sewer pipe,	1	Models, lasts, and patterns,	2
Brooms, brushes, and mops,	1	Musical instruments and materials,	1
Burial cases, caskets, coffins, etc.,	1	Paper,	3
Carriages and wagons,	6	Polishes and dressing,	1
Clothing,	7	Print works, dye works, and bleacheries,	2
Cooking, lighting, and heating apparatus,	1	Shipbuilding,	1
Cordage and twine,	1	Silk and silk goods,	1
Cotton goods,	5	Sporting and athletic goods,	1
Electrical apparatus and appliances,	1	Straw and palm leaf goods,	2
Fireworks and matches,	1	Wooden goods,	1
Flax, hemp, and jute goods,	1	Woollen goods,	12
Food preparations,	5	Worsted goods,	3
Furniture,	1	**Buildings Constructed during the Year.**	119
Hosiery and knit goods,	4	Arms and ammunition,	1
Ink, mucilage, and paste,	1	Artisans' tools,	2
Ivory, bone, shell, and horn goods, etc.,	4	Boots and shoes,	6
Jewelry,	3	Boxes, barrels, kegs, etc.,	6
		Carpetings,	1

Classification of Subjects and Industries.	Number
Buildings Constructed during the Year — Con.	
Carriages and wagons,	2
Clothing,	1
Cordage and twine,	1
Cotton goods,	16
Electrical apparatus and appliances,	8
Flax, hemp, and jute goods,	2
Food preparations,	5
Furniture,	1
Glue, isinglass, and starch,	1
Hosiery and knit goods,	5
Ivory, bone, shell, and horn goods, etc.,	1
Jewelry,	2
Leather,	2
Liquors (malt),	2
Lumber,	1
Machines and machinery,	8
Metals and metallic goods,	6
Musical instruments and materials,	1
Paints, colors, and crude chemicals,	1
Paper,	2
Paper goods,	2
Printing, publishing, and bookbinding,	1
Print works, dye works, and bleacheries,	5
Rubber and elastic goods,	6
Shipbuilding,	1
Silk and silk goods,	1
Stone (cut and monumental),	1
Straw and palm leaf goods,	1
Tobacco, snuff, and cigars,	1
Wooden goods,	1
Woollen goods,	15
Machinery added to Plants.	146
Artisans' tools,	1
Boots and shoes,	9
Boxes, barrels, kegs, etc.,	1
Buttons and dress trimmings,	1
Cotton goods,	63
Flax, hemp, and jute goods,	1
Hose: rubber, linen, etc.,	1
Hosiery and knit goods,	2
Ivory, bone, shell, and horn goods, etc.,	2
Leather,	1
Liquors (bottled) and carbonated beverages,	1
Lumber,	1

Classification of Subjects and Industries.	Number
Machinery added to Plants — Con.	
Machines and machinery,	9
Metals and metallic goods,	2
Paper,	7
Rubber and elastic goods,	1
Silk and silk goods,	3
Stone (quarried),	1
Tobacco, snuff, and cigars,	1
Woollen goods,	30
Worsted goods,	8
Other Additions to Plants.	136
Arms and ammunition,	1
Artisans' tools,	2
Boots and shoes,	17
Boxes, barrels, kegs, etc.,	2
Building materials,	2
Burial cases, caskets, coffins, etc.,	1
Carriages and wagons,	4
Cement, kaolin, lime, and plaster,	1
Clothing,	3
Cooking, lighting, and heating apparatus,	1
Cordage and twine,	1
Cotton goods,	25
Emery and sand paper and cloth, etc.,	1
Flax, hemp, and jute goods,	2
Food preparations,	1
Hosiery and knit goods,	2
Ivory, bone, shell, and horn goods, etc.,	1
Leather,	5
Leather goods,	1
Liquors (bottled) and carbonated beverages,	1
Liquors (malt),	1
Lumber,	1
Machines and machinery,	11
Metals and metallic goods,	5
Musical instruments and materials,	1
Paper,	7
Paper goods,	1
Print works, dye works, and bleacheries,	6
Rubber and elastic goods,	2
Silk and silk goods,	1
Stone (quarried),	2
Straw and palm leaf goods,	1
Wooden goods,	1
Woollen goods,	19
Worsted goods,	3

Classification of Subjects and Industries.	Number
Addition of New Class of Product.	20
Arms and ammunition,	1
Artisans' tools,	1
Boots and shoes,	7
Clothing,	1
Cotton goods,	2
Food preparations,	2
Liquors (distilled),	1
Machines and machinery,	1
Rubber and elastic goods,	1
Woollen goods,	3
Rebuilding of Burned Factories, etc.	15
Boots and shoes,	2
Boxes, barrels, kegs, etc.,	1
Chemical preparations (compounded),	1
Crayons, pencils, crucibles, etc.,	1
Food preparations,	1
Furniture,	2
Metals and metallic goods,	1
Paints, colors, and crude chemicals,	1
Paper,	1
Silk and silk goods,	1
Woollen goods,	3
Removals to New or Larger Quarters.	46
Artisans' tools,	1
Boots and shoes,	33
Buttons and dress trimmings,	1
Carriages and wagons,	2
Food preparations,	1
Hose: rubber, linen, etc.,	1
Hosiery and knit goods,	1
Jewelry,	1
Leather goods,	1
Machines and machinery,	1
Paper goods,	1
Polishes and dressing,	1
Tobacco, snuff, and cigars,	1
Resumption of Business after Protracted Shutdowns.	5
Paper,	1
Stone (quarried),	1
Woollen goods,	3
Increased Capacity of Plants.	31
Boots and shoes,	21
Boxes (paper),	1
Buttons and dress trimmings,	1

Classification of Subjects and Industries.	Number
Increased Capacity of Plants — Con.	
Carpetings,	1
Clothing,	2
Leather,	1
Machines and machinery,	1
Metals and metallic goods,	2
Models, lasts, and patterns,	1
Changes from Private Firms to Corporations.	23
Boots and shoes,	8
Boxes, barrels, kegs, etc.,	1
Cotton goods,	1
Food preparations,	2
Ivory, bone, shell, and horn goods, etc.,	1
Jewelry,	1
Leather,	1
Liquors (bottled) and carbonated beverages,	1
Machines and machinery,	2
Polishes and dressing,	1
Saddlery and harness,	1
Woollen goods,	2
Worsted goods,	1
Changes in Firms, Firm Names, etc.	77
Boots and shoes,	33
Boxes, barrels, kegs, etc.,	3
Building materials,	1
Burial cases, caskets, coffins, etc.,	1
Carriages and wagons,	2
Cement, kaolin, lime, and plaster,	1
Clothing,	3
Cotton goods,	1
Food preparations,	2
Furniture,	2
Hosiery and knit goods,	1
Leather,	3
Machines and machinery,	1
Metals and metallic goods,	3
Models, lasts, and patterns,	2
Paper,	2
Polishes and dressing,	2
Printing, publishing, and bookbinding,	2
Print works, dye works, and bleacheries,	3
Rubber and elastic goods,	1
Stone (quarried),	2
Tobacco, snuff, and cigars,	2
Woollen goods,	4

Classification of Subjects and Industries.	Number
Changes in Character of Product.	5
Boots and shoes,	2
Carriages and wagons,	1
Cotton goods,	1
Woollen goods,	1
Changes in Character of Machinery.	11
Boots and shoes,	2
Cotton goods,	6
Food preparations,	1
Woollen goods,	2
Consolidations of Firms and Corporations.	6
Boots and shoes,	1
Cotton goods,	1
Metals and metallic goods,	3
Stone (quarried),	1
Removals of Firms and Industries from Massachusetts to Other States.	15
Boots and shoes,	5
Cotton goods,	1
Hosiery and knit goods,	1
Jewelry,	1
Machines and machinery,	2
Stone (quarried),	1
Wooden goods,	1
Woollen goods,	3
Removals from one Town to another in Massachusetts.	19
Arms and ammunition,	1
Boots and shoes,	6
Clothing,	5
Cotton goods,	1
Jewelry,	1
Lumber,	1
Machines and machinery,	1
Models, lasts, and patterns,	1
Straw and palm leaf goods,	1
Woollen goods,	1
Introduction of Electric Lighting and Power into Factories, etc.	9
Boots and shoes,	4
Clothing,	1
Cotton goods,	1
Woollen goods,	2
Worsted goods,	1

Classification of Subjects and Industries.	Number
Suspensions for Vacations.	81
Arms and ammunition,	2
Artisans' tools,	4
Bicycles, tricycles, etc.,	2
Boots and shoes,	14
Boxes, barrels, kegs, etc.,	1
Buttons and dress trimmings,	1
Clocks and watches,	7
Cotton goods,	11
Emery and sand paper and cloth, etc.,	1
Fancy articles, etc.,	1
Furniture,	1
Hosiery and knit goods,	4
Ivory, bone, shell, and horn goods, etc.,	3
Jewelry,	5
Leather goods,	1
Machines and machinery,	2
Metals and metallic goods,	7
Paper,	3
Print works, dye works, and bleacheries,	1
Silk and silk goods,	1
Sporting and athletic goods,	1
Tobacco, snuff, and cigars,	1
Woollen goods,	2
Worsted goods,	5
Suspensions for Stock Taking.	50
Artisans' tools,	1
Boots and shoes,	25
Carpetings,	1
Clocks and watches,	1
Clothing,	4
Cotton goods,	2
Electrical apparatus and appliances,	2
Furniture,	1
Hosiery and knit goods,	1
Ivory, bone, shell, and horn goods, etc.,	1
Leather,	1
Machines and machinery,	1
Metals and metallic goods,	3
Scientific instruments and appliances,	1
Silk and silk goods,	1
Toys and games (children's),	1
Woollen goods,	2
Worsted goods,	1

Classification of Subjects and Industries.	Number
Suspensions on account of Low Water.	15
Arms and ammunition,	1
Clothing,	1
Cotton goods,	7
Machines and machinery,	1
Metals and metallic goods,	1
Paper,	2
Wooden goods,	1
Woollen goods,	1
Suspensions on account of High Water.	65
Boxes, barrels, kegs, etc.,	1
Carpetings,	2
Cotton goods,	20
Furniture,	1
Ivory, bone, shell, and horn goods, etc.,	3
Leather,	1
Lumber,	2
Machines and machinery,	11
Metals and metallic goods,	1
Paper,	8
Print works, dye works, and bleacheries,	2
Woollen goods,	8
Worsted goods,	5
Suspensions on account of Repairs and Improvements.	80
Artisans' tools,	1
Boots and shoes,	11
Brick, tiles, and sewer pipe,	1
Buttons and dress trimmings,	1
Clothing,	3
Cotton goods,	9
Ivory, bone, shell, and horn goods, etc.,	1
Jewelry,	3
Lumber,	2
Metals and metallic goods,	4
Paper,	23
Printing, publishing, and book-binding,	1
Print works, dye works, and bleacheries,	6
Silk and silk goods,	2
Woollen goods,	10
Worsted goods,	2
Suspensions on account of Shortage of Materials.	5
Carpetings,	1
Cotton goods,	3
Worsted goods,	1

Classification of Subjects and Industries.	Number
Suspensions for Curtailment of Production.	70
Cotton goods,	70
Suspensions on account of Accidents.	78
Arms and ammunition,	1
Boots and shoes,	14
Boxes, barrels, kegs, etc.,	1
Cotton goods,	37
Electrical apparatus and appliances,	1
Furniture,	1
Ivory, bone, shell, and horn goods, etc.,	1
Leather,	1
Machines and machinery,	3
Metals and metallic goods,	1
Musical instruments and materials,	1
Paper,	1
Print works, dye works, and bleacheries,	2
Woollen goods,	10
Worsted goods,	3
Suspensions on account of Dull Trade.	27
Bicycles, tricycles, etc.,	1
Boots and shoes,	2
Carpetings,	1
Leather,	1
Metals and metallic goods,	1
Paper,	2
Print works, dye works, and bleacheries,	2
Rubber and elastic goods,	2
Woollen goods,	12
Worsted goods,	3
Suspensions (Temporary as to Duration).	111
Agricultural implements,	1
Artisans' tools,	1
Boots and shoes,	18
Carpetings,	1
Clocks and watches,	2
Clothing,	2
Cooking, lighting, and heating apparatus,	3
Cotton goods,	4
Drugs and medicines,	1
Glue, isinglass, and starch,	1
Hosiery and knit goods,	1
Jewelry,	19
Machines and machinery,	1

Classification of Subjects and Industries.	Number
Suspensions (Temporary as to Duration) — Con.	
Metals and metallic goods,	4
Models, lasts, and patterns,	1
Paints, colors, and crude chemicals,	1
Print works, dye works, and bleacheries,	1
Rubber and elastic goods,	2
Stone (quarried),	18
Stone (cut and monumental),	19
Woollen goods,	8
Worsted goods,	2
Suspensions (Indefinite as to Duration).	17
Boots and shoes,	2
Carriages and wagons,	1
Clothing,	1
Cotton goods,	2
Leather,	1
Paints, colors, and crude chemicals,	1
Rubber and elastic goods,	1
Scientific instruments and appliances,	1
Woollen goods,	3
Worsted goods,	4
Suspensions (cause not given).	59
Boots and shoes,	22
Buttons and dress trimmings,	1
Clothing,	1
Cordage and twine,	1
Cotton goods,	3
Earthen, plaster, and stone ware,	1
Jewelry,	4
Leather,	2
Machines and machinery,	1
Metals and metallic goods,	8
Paper,	3
Print works, dye works, and bleacheries,	2
Woollen goods,	7
Worsted goods,	3
Suspensions on account of Retirement from Business (No Successor).	62
Artisans' tools,	1
Boots and shoes,	33
Boxes, barrels, kegs, etc.,	1
Brick, tiles, and sewer pipe,	1
Building materials,	1

Classification of Subjects and Industries.	Number
Suspensions on account of Retirement from Business (No Successor) — Con.	
Clothing,	3
Cordage and twine,	1
Cotton goods,	2
Food preparations,	1
Furniture,	1
Glass,	1
Leather,	3
Leather goods,	1
Machines and machinery,	4
Metals and metallic goods,	1
Musical instruments and materials,	1
Paper,	1
Perfumes, toilet articles, etc.,	1
Scientific instruments and appliances,	1
Tobacco, snuff, and cigars,	1
Toys and games,	1
Wooden goods,	1
Sales of Plants in Whole or in Part.	72
Bicycles, tricycles, etc.,	1
Boots and shoes,	11
Boxes, barrels, kegs, etc.,	1
Boxes (paper),	3
Building materials,	1
Carriages and wagons,	5
Cotton goods,	2
Dyestuffs,	1
Fancy articles, etc.,	1
Food preparations,	3
Glass,	1
Hosiery and knit goods,	1
Jewelry,	3
Leather,	1
Liquors (bottled) and carbonated beverages,	2
Liquors (malt),	1
Liquors (distilled),	1
Lumber,	2
Machines and machinery,	3
Metals and metallic goods,	5
Musical instruments and materials,	1
Paper,	4
Stone (quarried),	1
Tallow, candles, soap, and grease,	1
Toys and games (children's),	2
Wooden goods,	1
Woollen goods,	12
Worsted goods,	1

Classification of Subjects and Industries.	Number
Sales of Plants to Industrial Combinations.	55
Boots and shoes,	1
Brick, tiles, and sewer pipe,	14
Carriages and wagons,	1
Food preparations,	1
Furniture,	1
Liquors (malt),	10
Machines and machinery,	3
Metals and metallic goods,	4
Models, lasts, and patterns,	1
Stone (quarried),	19
Plants Damaged by Explosions.	6
Boots and shoes,	1
Fireworks and matches,	2
Gas and residual products,	1
Paints, colors, and crude chemicals,	1
Print works, dye works, and bleacheries,	1
Fires during the Year.	185
Arms and ammunition,	1
Artisans' tools,	1
Boots and shoes,	24
Boxes, barrels, kegs, etc.,	4
Boxes (paper),	1
Brick, tiles, and sewer pipe,	1
Building,	1
Carpetings,	1
Carriages and wagons,	5
Chemical preparations (compounded),	1
Clothing,	3
Cooking, lighting, and heating apparatus,	1
Cordage and twine,	2
Cotton goods,	24
Crayons, pencils, crucibles, etc.,	1
Electroplating,	1
Fancy articles, etc.,	1
Fireworks and matches,	2
Food preparations,	5
Furniture,	11
Gas and residual products,	2
Glass,	2
Hosiery and knit goods,	2
Ivory, bone, shell, and horn goods, etc.,	2
Leather,	4
Leather goods,	1
Liquors (malt),	1

Classification of Subjects and Industries.	Number
Fires during the Year—Con.	
Lumber,	8
Machines and machinery,	6
Metals and metallic goods,	5
Models, lasts, and patterns,	1
Musical instruments and materials,	1
Paints, colors, and crude chemicals,	2
Paper,	6
Printing, publishing, and bookbinding,	7
Print works, dye works, and bleacheries,	3
Rubber and elastic goods,	2
Saddlery and harness,	1
Shipbuilding,	4
Silk and silk goods,	1
Straw and palm leaf goods,	2
Tallow, candles, soap, and grease,	1
Tobacco, snuff, and cigars,	5
Trunks and valises,	1
Wooden goods,	8
Woollen goods,	14
Worsted goods,	2
Deaths of Manufacturers.	120
Arms and ammunition,	2
Awnings, sails, tents, etc.,	2
Boots and shoes,	27
Boxes, barrels, kegs, etc.,	1
Building,	3
Carriages and wagons,	2
Chemical preparations (compounded),	1
Clothing,	3
Cooking, lighting, and heating apparatus,	1
Cordage and twine,	1
Cotton goods,	4
Drugs and medicines,	1
Electroplating,	1
Food preparations,	1
Glass,	1
Jewelry,	8
Leather,	5
Leather goods,	1
Liquors (malt),	2
Machines and machinery,	10
Metals and metallic goods,	8
Models, lasts, and patterns,	1
Paints, colors, and crude chemicals,	2
Paper,	2
Saddlery and harness,	1

Classification of Subjects and Industries.	Number	Classification of Subjects and Industries.	Number
Deaths of Manufacturers — Con.		**Deaths of Manufacturers — Con.**	
Scientific instruments and appliances,	1	Tobacco, snuff, and cigars,	2
Silk and silk goods,	2	Whips, lashes, and stocks,	1
Stone (cut and monumental),	1	Wooden goods,	3
Straw and palm leaf goods,	1	Woollen goods,	12
Tallow, candles, soap, and grease,	2	Worsted goods,	4

Corporations and Capital Stock.

In the following table, the number of new corporations formed during the year is shown, together with the amount of capital authorized by their charters; also increases and decreases in capital stock, classified by industries. These figures do not include private firms which, during 1900, changed from the individual form to the corporate form of management.

Subjects and Industries.	Number	Amount of authorized Capital
New Corporations.	48	$10,535,500
Artisans' tools,	1	25,000
Boots and shoes,	11	260,000
Brick, tiles, and sewer pipe,	1	125,000
Carriages and wagons,	2	150,000
Clothing,	3	25,000
Cotton goods,	3	542,500
Electrical apparatus and appliances,	1	100,000
Flax, hemp, and jute goods,	1	5,000,000
Food preparations,	2	220,000
Hosiery and knit goods,	1	10,000
Jewelry,	1	3,000
Leather,	2	85,000
Machines and machinery,	4	1,050,000
Metals and metallic goods,	4	1,700,000
Paper,	1	200,000
Polishes and dressing,	1	10,000
Print works, dye works, and bleacheries,	2	610,000
Rubber and elastic goods,	1	25,000
Woollen goods,	5	155,000
Worsted goods,	1	240,000
Increases in Capital Stock.	12	$1,938,000
Boots and shoes,	1	3,000
Clothing,	1	20,000
Cotton goods,	8	1,730,000
Hosiery and knit goods,	1	10,000
Rubber and elastic goods,	1	150,000
Woollen goods,	1	25,000
Decreases in Capital Stock.	2	$750,000
Boots and shoes,	1	50,000
Metals and metallic goods,	1	700,000

RECAPITULATION. 1899, 1900.

In the following table, we bring forward the subjects shown in the two preceding presentations in comparison with similar data contained in the Chronology for 1899:

Classification of Subjects.	Number of Establishments, etc.	
	1899	1900
New establishments, etc.,	160	156
Buildings constructed during the year,	73	119
Machinery added to plants,	175	146
Other additions to plants,	178	136
Addition of new class of product to manufacture,	28	20
Rebuilding of burned factories, etc.,	19	15
Removals to new or larger quarters,	43	46
Resumption of business after protracted shutdowns,	29	5
Increased capacity of plants,	-	31
Changes from private firms to corporations,	20	23
Changes in firms, firm names, etc.,	64	77
Changes in character of product,	7	5
Changes in character of machinery,	12	11
Consolidations of firms and corporations,	12	6
Removals of firms and industries *to* Massachusetts from other States,	3	-
Removals of firms and industries *from* Massachusetts to other States,	9	15
Removals from one town to another in Massachusetts,	27	19
Introduction of electric lighting and power into factories, etc.,	19	9
Suspensions for vacations,	65	81
Suspensions for stock taking,	46	50
Suspensions on account of low water,	24	15
Suspensions on account of high water,	8	65
Suspensions on account of repairs and improvements,	68	80
Suspensions on account of shortage of materials,	-	5
Suspensions for curtailment of production,	1	70
Suspensions on account of accidents to machinery, etc.,	78	78
Suspensions on account of dull trade,	13	27
Suspensions (temporary as to duration),	-	111
Suspensions (indefinite as to duration),	54	17
Suspensions (cause not given),	99	59
Suspensions on account of retirement from business (no successor),	65	62
Sales of plants in whole or in part,	137	72
Sales of plants to industrial combinations,	91	55
Plants damaged by explosions,	5	6
Fires during the year,	275	185
Deaths of manufacturers,	111	120
New corporations,	47	48
Amount of authorized capital,	$5,721,000	$10,535,500
Increases in capital stock,	20	12
Amount of increase,	$4,225,500	$1,938,000
Decreases in capital stock,	7	2
Amount of decrease,	$1,110,800	$750,000
Net increase of capital stock,	$3,114,700	$1,188,000

INDUSTRIAL DIVIDENDS.

In the following table, we reproduce, as a matter of record, the annual dividends paid in certain manufacturing corporations doing business in this Commonwealth as compiled by Joseph G. Martin of Boston. Comparison is made between the rates paid in 1899 and 1900.

Dividends.

Names of Companies.	Rate of Dividends		Names of Companies.	Rate of Dividends	
	1899	1900		1899	1900
Acushnet Mill Corporation,	$16	[1]$20	City Manufacturing Co.,	6¾	8
Ætna Mills,	2	9	Conanicut Mills,	6	8
A. L. Blackmer Co.,	5	6	Cordis Mills,	10	10
Am. Agricultural Chemical, (pref.),	1½	6	Cornell Mills,	[6]12½	[5]13
American Glue Co. (pref.),	8	8	Crystal Spring M'f'g Co.,	5¼	4½
American Linen Co.,	4¼	6½	Dartmouth M'f'g Corporation,	4½	10
Am. Soda Fountain Co. (1st pref.),	–	3	Davol Mills,	5½	8
Am. Steel & Wire Co.,	–	5¼	Diamond Match Co.,	10	10
Am. Steel & Wire Co. (pref.),	5¼	5¼	Dwight Manufacturing Co.,	10	12
Am. Sugar Refinery Co.,	12	7¾	Everett Mills,	5	6
Am. Sugar Refinery Co. (pref.),	7	7	Fisher Manufacturing Co.,	5	6
Am. Waltham Watch Co.,	[2]9	10	Fiskdale Mills,	–	4
Am. Woollen Co. (pref.),	3½	7	Flint Mills,	6	8
Appleton Co.,	6	7	General Electric Co.,	3	6½
Arkwright Mills,	0	4½	General Electric Co. (pref.),	7	7
Arlington Mills,	6	6	Globe Buffer Co.,	8	7
Ashton Valve Co.,	7	[3]7	Granite Mills,	6	8
Atlantic Mills,	0	4	Grinnell M'f'g Corporation,	10	[7]10
Barnaby Manufacturing Co.,	6	3	Hamilton Manufacturing Co.,	4½	6
Barnard Manufacturing Co.,	3¼	8	Hamilton Woollen Co.,	1	4
Bigelow Carpet Co.,	[4]–	1½	Hargraves Mills,	6	6
Boott Cotton Mills,	3	6	Hathaway M'f'g Co.,	10	[8]12½
Border City M'f'g Co.,	6	[5]8	Hathaway, Soule, & Harrington, Inc.,	4½	2
Boston Belting Co.,	8	8	Heywood Bros. & Wakefield Co. (pref.),	4	4
Boston Duck Co.,	8	10	Holyoke Water Power Co.,	10	10
Boston Woven Hose & Rubber Co. (pref.),	3	3	International Paper Co. (pref.),	6	6
Bowker Fertilizer Co.,	7	6	King Philip Mills,	7½	[5]6
Bristol Manufacturing Co.,	4½	6¾	Lancaster Mills,	8	8
Chace Mills,	6	6	Laurel Lake Mills,	3¾	6
Chapman Valve Co.,	12	12	Lawrence M'f'g Co.,	6	8
Chicopee Manufacturing Co.,	6	6	Lowell Bleachery,	4	4
			Lowell Hosiery Co.,	4	4

[1] $4 of this extra in April.
[2] Also 16⅔ stock dividend Oct. 12, when capital stock was increased $1,000,000.
[3] One per cent of this extra.
[4] See Lowell Manufacturing Co.
[5] Also a cash dividend of 50 per cent.
[6] 5 of this extra, in 1899 and 1900.
[7] Capital increased from $800,000 to $1,000,000, and a cash dividend of $75 per share paid Dec. 1 from proceeds of sale of stock and 1st mortgage 5 per cent bonds.
[8] 2½ of this extra in April.

Dividends — Concluded.

Names of Companies.	Rate of Dividends	
	1899	1900
Lowell Machine Shops,	9	10
Lowell Manufacturing Co.,	1–	1–
Lyman Mills,	4	4
Massachusetts Cotton Mills,	6	6
Mechanics Mills,	5	6
Merchants M'f'g Co.,	1	6
Merrimack Chemical Co.,	7	7
Merrimac M'f'g Co.,	6	[2]6
Metacomet M'f'g Co.,	0	2
Middlesex Co.,	6	6
Morse Twist Drill & Machine Co.,	[3]–	[3]–
Narragansett Mills,	5	8
National Biscuit Co.,	1	4
National Biscuit Co. (pref.),	7	7
National Lead Co.,	1	1
National Lead Co. (pref.),	7	7
Naumkeag Steam Cotton Co.,	2	4
New Bedford Copper Co.,	6	[4]3
New Bedford Cordage Co.,	6	6
New England Cotton Yarn Co. (pref.),	0	6¾
New England Piano Co.,	3	6
Osborn Mills,	5	[5]8½
Otis Mills,	10	10
Pacific Mills,	10	[6]30
Parker Mills,	5¾	6¼
Pierce M'f'g Corporation,	7	8
Pocasset Manufacturing Co.,	4½	6
Potomska Mills Corporation,	5	6
Putnam Nail Co.,	5	0
Reece Button Hole Machine Co.,	12	10
Revere Rubber Co.,	4	4
Reversible Collar Co.,	10	12½
Richard Borden M'f'g Co.,	7½	9
Robeson Mills,	3	6
Saco & Pettee Machine Co.,	6	6
Sagamore M'f'g Co.,	5½	9
Seaconnet Mills,	6	7
Shaw Stocking Co.,	6	6
Shove Mills,	2½	[7]4½
Stafford Mills,	[8]14	8
Stevens Manufacturing Co.,	8	8
Taunton-New Bedford Copper Co.,	–	[9]3
Tecumseh Mills,	5	7½
Thorndike Co.,	8	8
Tremont & Suffolk Mills,	[10]7	8
Troy Cotton & Woollen Manufactory,	18	27
Union Bag & Paper Co. (pref.),	3½	7
Union Cotton M'f'g Co.,	8½	[11]10
United Shoe Machinery Co.,	4⅔	8
United Shoe Machinery Co. (pref.),	3	6
U. S. Envelope Co. (pref.),	7	7
U. S. Leather Co. (pref.),	5	6
U. S. Rubber Co.,	2	2
U. S. Rubber Co. (pref.),	8	8
Wampanoag Mills,	6	7
Wamsutta Mills,	6	6
Weetamoe Mills,	4½	6
Whitman Mills,	6	7

[1] $25 per share in 1899; combined with Bigelow Carpet Co. in 1900.

[2] Increased capital stock from $2,500,000 to $2,750,000 in July, and reduced par value of stock from $1,000 to $100 — 10 shares for one.

[3] $8 per share in 1899 and 1900.

[4] Consolidated with Revere Copper Co. and Taunton Copper Co.

[5] Also a stock dividend of 25 per cent, and capital stock increased from $600,000 to $750,000.

[6] Increased capital stock from $2,500,000 to $3,000,000 in March, and at same time paid extra cash dividend of 20 per cent which just covered the increase.

[7] Also a cash dividend of 25 per cent.

[8] 6½ of this extra.

[9] Organized in 1900 from a combination of Revere Copper Co., Taunton Copper Co., and New Bedford Copper Co.

[10] 33⅓ extra dividend Oct. 27 when capital stock was increased $500,000.

[11] Also a cash dividend of 15 per cent and stock dividend of 60 per cent when capital was increased from $750,000 to $1,200,000.

STOCK PRICE QUOTATIONS.

In the following table is shown the highest and lowest stock price quotations for 1899 and 1900, together with the amount of capital stock on January 1, 1901, and the par value of stock. The figures were compiled by Joseph G. Martin of Boston.

Stock Price Quotations.

Names of Companies.	Capital Stock, Jan. 1, 1901	Par Value of Stock	Stock Price Quotations			
			1899		1900	
			Highest	Lowest	Highest	Lowest
Acushnet Mills,	$500,000	$100	–	–	326	319¼
Am. Agricultural Chemical Co.,	20,000,000	100	45	23½	34	20
Am. Agricultural Chem. Co. (pref.),	20,000,000	100	85	74	81	70
American Linen Co.,	800,000	100	108	90	105	85
Am. Soda Fountain Co.,	1,250,000	100	6	5	0	0
Am. Soda Fountain Co. (1st pref.),	1,250,000	100	52	43	*45	–
Am. Soda Fountain Co. (2d pref.),	1,250,000	100	11	9	0	0
Am. Steel & Wire Co.,	50,000,000	100	†72	†32	†59⅞	†28½
Am. Steel & Wire Co. (pref.),	40,000,000	100	†106¾	†84	†95	†69½
Am. Sugar Refinery Co.,	36,968,000	100	186	114⅞	148⅝	96
Am. Sugar Refinery Co. (pref.),	36,968,000	100	122	110½	118	107
Am. Waltham Watch Co.,	4,000,000	100	175	120	158⅜	137
American Woollen Co.,	25,000,000	100	26¼	19	25¾	11¼
American Woollen Co. (pref.),	16,000,000	100	100	75	82¼	67
Appleton Co.,	450,000	100	106	101	107⅛	104½
Arkwright Mills,	450,000	100	*92½	–	90	85
Arlington Mills,	2,500,000	100	106¼	100	105¼	100
Ashton Valve Co.,	150,000	100	95	92½	100	87
Atlantic Mills,	1,000,000	100	65	44	67⅛	53½
Barnaby Manufacturing Co.,	400,000	100	90	70	85	82½
Barnard Manufacturing Co.,	495,000	100	100	77½	108	95
Bigelow Carpet Co.,	4,020,000	100	‡-	‡-	95	80¾
Boott Cotton Mills,	1,200,000	1,000	822½	700	817½	760
Border City Manufacturing Co.,	1,000,000	100	147½	105	155	100
Boston Belting Co.,	1,000,000	100	210¼	185	211⅝	200
Boston Duck Co.,	350,000	700	975	860	0	0
Boston Manufacturing Co.,	800,000	1,000	462½	447½	376	350
Bowker Fertilizer Co.,	1,000,000	100	122	91	85	80
Bristol Manufacturing Co.,	500,000	100	–	–	100	91
Chace Mills,	750,000	100	110	95	98	88½
Chicopee Manufacturing Co.,	1,000,000	100	95½	77¾	95	87
City Manufacturing Co.,	750,000	100	–	–	125	113¾
Conanicut Mills,	120,000	100	–	–	102	100
Cornell Mills,	400,000	100	130	100	130	127½
Cornell Stocking Co.,	29,000	100	–	–	100	98
Corr Manufacturing Co.,	500,000	100	*87½	–	–	–
Dartmouth Manufacturing Co.,	600,000	100	–	–	141	123
Davol Mills,	400,000	100	110	100	110	100
Dwight Manufacturing Co.,	1,200,000	500	957½	852½	1,020	980
Everett Mills,	800,000	100	97	73¼	97½	95
Fisher Manufacturing Co.,	500,000	100	–	–	*100	–

* Only sale. † New York prices. ‡ See Lowell Manufacturing Co.

Stock Price Quotations — Continued.

Names of Companies.	Capital Stock, Jan. 1, 1901	Par Value of Stock	Stock Price Quotations			
			1899		1900	
			Highest	Lowest	Highest	Lowest
Flint Mills,	$580,000	$100	110	95	109	100
General Electric Co.,	18,276,000	100	132	96	198¾	121
General Electric Co. (pref.),	2,551,200	100	166	135	156	135
Globe Yarn Mills,	1,200,000	100	90	65	–	–
Granite Mills,	1,000,000	100	110	95	125	110
Grinnell M'f'g Corporation,	1,000,000	100	*185	–	212	130
Hamilton Manufacturing Co.,	1,800,000	1,000	855	657½	900	835
Hamilton Woollen Co.,	1,000,000	100	51¼	40	51	48
Hargraves Mill,	800,000	100	110	100	110	99½
Heywood Bros. & Wakefield Co.,	2,000,000	100	0	0	15¼	12
Heywood Bros. & Wakefield Co. (pref.),	4,000,000	100	0	0	91	85
International Paper Co.,	20,000,000	100	†68½	†17	†26⅞	†14½
International Paper Co. (pref.),	25,000,000	100	†95	†62¼	†75	†58
King Philip Mills,	1,000,000	100	135	102½	105	92
Knitted Fabrics Co.,	100,000	100	–	–	*28	–
Lancaster Mills,	1,200,000	400	451¼	425	450	344
Laurel Lake Mills,	300,000	100	122	35	135	122½
Lawrence Manufacturing Co.,	750,000	100	127¼	108½	150½	125
Lowell Bleachery,	400,000	100	82¼	75¼	75	69
Lowell Hosiery Co.,	200,000	100	86¼	85¾	88½	84
Lowell Machine Shops,	900,000	500	800	651¼	797½	777½
Lowell Manufacturing Co.,	2,000,000	690	602½	520	‡-	‡-
Lyman Mills,	1,470,000	100	71½	52¼	74	66¼
Massachusetts Cotton Mills,	1,800,000	100	106¼	90½	104¼	98
Mechanics Mills,	750,000	100	90	70	93½	78
Merchants Manufacturing Co.,	800,000	100	105	75	110	92½
Merrimack Chemical Co.,	600,000	50	52¾	48	*52	–
Merrimac Manufacturing Co.,	2,750,000	100	1,170	965	§1,165	§108
Metacomet Manufacturing Co.,	288,000	100	–	–	*45	–
Middlesex Co.,	750,000	100	118¼	115	118¾	109
Morley Button Hole Mach. Co.,	500,000	10	7½	4½	0	0
Morse Twist Drill & Machine Co.,	600,000	50	–	–	180	177¾
Narragansett Mills,	400,000	100	108	90	108	100
National Biscuit Co.,	30,000,000	100	†62	†31	†40½	†23
National Biscuit Co. (pref.),	25,000,000	100	†107½	†89	†96	†79½
National Lead Co.,	14,905,400	100	†40½	†22½	†28¼	†15⅞
National Lead Co. (pref.),	14,904,000	100	†115	†103½	†106½	†83
National Tube Co.,	40,000,000	100	47	43½	69¾	41¾
National Tube Co. (pref.),	40,000,000	100	98½	93½	106¼	88
Naumkeag Steam Cotton Co.,	1,500,000	100	71	51¾	67½	60¼
New Bedford Copper Co.,	250,000	100	‖-	‖-	120	120
New Bedford Cordage Co.,	225,000	100	-	-	113	103
N. E. Cotton Yarn Co. (pref.),	5,000,000	100	107½	101	103¼	96

* Only sale.
† New York prices.
‡ See Bigelow Carpet Co., successors.
§ Par value of stock reduced from $1,000 to $100 in July.
‖ See Taunton-New Bedford Copper Co., successors.

Stock Price Quotations — Concluded.

Names of Companies.	Capital Stock, Jan. 1, 1901	Par Value of Stock	Stock Price Quotations			
			1899		1900	
			Highest	Lowest	Highest	Lowest
N. E. Gas & Coke Co.,	$14,000,000	$100	37	16½	24	7½
Otis Co.,	800,000	1,000	1,830	1,640	*1,852½	–
Pacific Mills,	3,000,000	1,000	2,225	2,000	2,520	1,950
Pairpoint Manufacturing Co.,	300,000	100	–	–	75	75
Osborn Mills,	750,000	100	110½	90	112½	97½
Parker Mills,	800,000	100	110	100	108	100
Pierce Manufacturing Co.,	600,000	100	–	–	150	145
Pocasset Manufacturing Co.,	600,000	100	117½	107	120	110
Potomska Mills,	1,200,000	100	90	85¼	97	89¼
Putnam Nail Co.,	300,000	100	101¾	70	64	50
Reece Button Hole Machine Co.,	1,000,000	10	14	11	12½	8½
Richard Borden Manufacturing Co.,	800,000	100	121	105	133	112½
Robeson Mills,	78,000	100	*72	–	0	0
Saco & Pettee Machine Co.,	800,000	100	–	–	*95	–
Sagamore Manufacturing Co.,	900,000	100	117½	98	113	100
Sanford Spinning Co.,	500,000	100	*97½	–	0	–
Seaconnet Mills,	600,000	100	105	100	105	90
Shaw Stocking Co.,	360,000	100	120¼	119	0	0
Shove Mills,	550,000	100	105	85	105	65
Slade Mills,	200,000	100	102½	100	*100	–
Stafford Mills,	1,000,000	100	116½	105	112¼	100
Taunton-New Bedford Copper Co.,	577,000	100	‡–	‡–	102	90
Tecumseh Mills,	500,000	100	117½	90	117½	103½
Thorndike Co.,	450,000	1,000	1,075	1,037½	0	0
Tremont & Suffolk Mills,	2,000,000	100	140	134	157½	138¾
Troy Cotton & Woollen Manufactory,	300,000	500	1,225	1,100	1,300	1,250
Union Bag & Paper Co.,	16,000,000	100	†45	†17¼	†25	†10
Union Bag & Paper Co. (pref.),	11,000,000	100	†89	†71	†77¾	†56¼
Union Cotton Manufacturing Co.,	1,200,000	100	200	137½	215	128
United Shoe Machinery Co.,	8,930,800	25	39¾	28	33⅛	28
United Shoe Machinery Co. (pref.),	9,240,875	25	29½	22¼	25	22½
United States Leather Co.,	62,869,800	100	40⅞	5⅝	18⅞	8
United States Leather Co. (pref.),	62,869,800	100	85½	64⅞	78	65⅜
United States Rubber Co.,	23,666,000	100	56¾	38¾	43	21
United States Rubber Co. (pref.),	23,525,500	100	120	100	105½	75
Wamsutta Mills,	3,000,000	100	110¼	95¼	107¾	104
Wampanoag Mills,	750,000	100	107½	92½	105¼	92½
Wason Manufacturing Co.,	300,000	100	*75⅛	–	–	–
Weetamoe Mills,	550,000	100	67½	55	67	57½
Whitman Mills,	550,000	100	–	–	115	105

* Only sale. † New York prices. ‡ See New Bedford Copper Co.

BUSINESS FAILURES.

The number of commercial failures in the United States in 1900 was 10,774. The total liabilities were $138,495,673 and the total assets, $88,079,555. Of these failures, 1,123, or 10.42 per cent, were in Massachusetts with liabilities of $15,300,835 and assets of $7,817,381, an increase over 1899, so far as relates to Massachusetts, of 180 in the number of failures, but a decrease of $455,376 in amount of liabilities, and a decrease of $839,200 in amount of assets.

The data presented in the following tables were supplied by R. G. Dun & Co. of New York and are taken from their official publication, *Dun's Review*. The first table exhibits the number of failures in Massachusetts from 1893 to 1900, inclusive, classified as manufacturing, trading, and other commercial.

Number of Commercial Failures. 1893-1900.

Years.	Number of Commercial Failures			
	Manufacturing	Trading	Other Commercial	Totals
1893,	356	718	14	1,088
1894,	285	546	5	836
1895,	288	270	9	567
1896,	299	563	19	881
1897,	301	605	18	924
1898,	314	674	15	1,003
1899,	355	555	33	943
1900,	383	649	91	1,123

The second table exhibits the liabilities of the establishments noted in the preceding table, under the same classification.

Amount of Liabilities. 1893-1900.

Years.	Classified Failures — Liabilities			
	Manufacturing	Trading	Other Commercial	Totals
1893,	$9,594,092	$12,629,179	$485,060	$22,708,331
1894	7,219,977	9,014,919	232,735	16,467,631
1895,	5,376,080	4,849,891	716,667	10,942,638
1896,	9,044,924	6,898,372	164,533	16,107,829
1897,	13,202,944	5,740,421	816,046	19,759,411
1898,	11,029,392	6,449,165	74,366	17,552,923
1899,	5,254,899	10,071,111	430,201	15,756,211
1900,	6,639,908	7,173,675	1,487,252	15,300,835

In the third table, we show the average amount of liabilities per failure for the years 1893 to 1900.

Average Liabilities. 1893-1900.

Years.	Average Amount of Liabilities per Failure			
	Manufacturing	Trading	Other Commercial	Totals
1893,	$26,950	$17,589	$34,647	$20,872
1894,	25,333	16,511	46,547	19,698
1895,	18,667	17,963	79,630	19,299
1896,	30,251	12,253	8,660	18,284
1897,	43,864	9,488	45,336	21,385
1898,	35,125	9,568	4,958	17,500
1899,	14,803	18,146	13,036	16,709
1900,	17,337	11,053	16,343	13,625

The relative proportions of the liabilities in manufacturing, trading, and other failures of the total are shown in the next table.

Proportion — Classified Liabilities of Total Liabilities. 1893-1900.

Years.	Proportion of Classified Liabilities of Total Liabilities			
	Manufacturing	Trading	Other Commercial	Totals
1893,	42.25	55.61	2.14	100.00
1894,	43.85	54.74	1.41	100.00
1895,	49.13	44.32	6.55	100.00
1896,	56.15	42.83	1.02	100.00
1897,	66.82	29.05	4.13	100.00
1898,	62.84	36.74	0.42	100.00
1899,	33.35	63.92	2.73	100.00
1900,	43.40	46.88	9.72	100.00

The next table exhibits the proportion of assets of liabilities in all failures considered.

Proportion — Assets of Liabilities. 1893-1900.

Years.	Proportion of Assets of Liabilities — Total Commercial Failures		
	Assets	Liabilities	Percentages
1893,	$12,649,296	$22,708,331	55.70
1894,	6,861,021	16,467,631	41.66
1895,	4,342,003	10,942,638	39.68
1896,	8,738,546	16,107,829	54.25
1897,	13,951,470	19,759,411	70.61
1898,	11,384,683	17,552,923	64.86
1899,	8,656,581	15,756,211	54.94
1900,	7,817,381	15,300,835	51.09

In 1900 for each $100 of liabilities there were $51.09 in the form of assets; indicating, on this basis, a probable settlement, on an average, of 50 cents on the dollar.

The next table shows for the United States and for each State the aggregate and average amounts of liabilities in the failures which occurred among manufacturing establishments during the year 1900.

Aggregate and Average Liabilities. 1900.

States and Territories.	Manufacturing Failures		States and Territories.	Manufacturing Failures	
	Total Liabilities	Average Liabilities		Total Liabilities	Average Liabilities
United States,	$51,702,142	$21,462	Mississippi,	$59,900	$11,980
Massachusetts,	6,639,908	17,337	Missouri,	551,703	8,898
Alabama,	20,800	5,020	Montana,	214,474	26,809
Arkansas,	146,470	10,462	Nebraska,	65,600	10,933
Arizona,	1,000	1,000	New Hampshire,	292,716	22,517
California,	338,001	4,122	New Jersey,	4,543,309	51,048
Colorado,	135,381	19,340	New Mexico,	6,535	6,535
Connecticut,	2,657,720	27,685	New York,	12,314,936	28,706
Delaware,	39,200	13,067	North Carolina,	55,895	11,179
District of Columbia,	70,608	7,845	North Dakota,	3,721	3,721
Florida,	261,006	20,077	Ohio,	1,686,502	17,942
Georgia,	615,205	38,450	Oklahoma,	1,400	1,400
Idaho,	37,600	4,178	Oregon,	240,829	15,744
Illinois,	5,012,403	18,986	Pennsylvania,	6,354,676	26,589
Indiana,	376,464	9,653	Rhode Island,	204,670	9,303
Indian Territory,	134,300	22,217	South Carolina,	700	700
Iowa,	464,675	7,876	South Dakota,	25,567	12,784
Kansas,	26,166	3,738	Tennessee,	377,550	17,161
Kentucky,	387,377	14,347	Texas,	490,840	18,179
Louisiana,	224,089	16,006	Utah,	684,674	28,528
Maine,	352,114	8,189	Vermont,	274,223	16,131
Maryland,	2,749,439	46,601	Virginia,	281,293	15,627
Michigan,	404,008	13,467	Washington,	402,023	16,081
Minnesota,	677,150	21,161	West Virginia,	97,878	6,525
			Wisconsin,	499,444	13,143

The final table exhibits the aggregate amount of liabilities in the United States so far as relates to establishments classed under the head of manufacturing failures.

Amount of Liabilities by Branches of Manufactures.

Branches of Manufactures.	1896	1897	1898	1899	1900
Iron, foundries, and nails,	$5,071,160	$5,945,834	$2,106,189	$1,119,901	$2,615,159
Machinery and tools,	5,753,385	4,714,317	7,286,389	2,700,478	6,990,746
Woollens, knit goods, etc.,	8,364,198	1,491,860	6,428,700	1,094,760	4,299,719
Cottons, lace, and hosiery,	2,649,339	9,800,716	2,016,573	395,109	58,100
Lumber, coopers, etc.,	16,314,532	7,404,090	6,334,445	5,343,880	11,853,965
Clothing and millinery,	4,598,218	2,482,646	2,426,944	3,599,076	3,351,479
Hats, gloves, and furs,	1,091,602	701,654	505,210	195,690	326,587
Chemicals, drugs, and paints,	2,653,116	820,077	2,833,356	1,103,297	627,868
Printing and engraving,	3,535,445	3,215,839	2,264,097	1,408,080	1,259,084
Milling and bakers,	4,021,012	2,869,476	1,119,564	1,306,897	826,503
Leather, shoes, and harness,	4,527,785	3,524,740	3,596,450	1,433,720	2,313,832
Liquors and tobacco,	8,286,328	4,536,440	1,850,818	2,433,133	2,146,432
Glass, earthenware, and bricks,	2,055,595	1,985,207	1,406,080	868,844	829,340
All others,	29,542,136	18,372,192	17,369,546	7,789,299	14,203,328
Totals,	$98,463,851	$67,865,088	$57,544,361	$30,792,164	$51,702,142

BATTLE SHIP CONSTRUCTION IN MASSACHUSETTS.

The recent allotment of a contract to the Fore River Ship and Engine Co. of Quincy, by the United States Government, for the construction of two 15,000-ton battle ships has awakened an interest in the shipbuilding industry and its history in this State, especially in relation to such plants as have been or are now engaged in the construction of war vessels for the Government.

Shipbuilding in America dates back to 1607, when the *Virginia* was built at the mouth of the Kennebec River. In 1614 the *Onrest** was built at New York, and in 1631 the *Blessing of the Bay* was launched by its owner, Gov. Winthrop. This vessel was built on the bank of the Mystic River, probably not far from the governor's house at "Ten Hills." There is a tradition that it was built on the north shore of the river, and, therefore, within the limits of Medford. The record concerning it is as follows:

"July 4, 1631. The governor built a bark at Mistick, which was launched this day, and was called 'The Blessing of the Bay.' Aug. 9, the same year, the governor's bark, being of thirty tons, went to sea. It cost £145. The owner said of it, May 16, 1636, 'I will sell her for £160.'"

These vessels were employed in the coasting or fishing trade, and it was not until 1640 that vessels for the transatlantic trade were launched in the Colonies. Shipbuilding, on an extended scale, was carried on during the Revolutionary War both by the Government and by private individuals. At the close of hostilities many of these vessels engaged in the East Indian and other foreign trades, and after the close of the war of 1812, packet ships, as they were called, were constructed to accommodate the immigration then beginning from Europe to the Colonies.

The great abundance of oak growing near the Merrimac River made that a favored locality for shipbuilding, and as early as 1650 Newbury, Salisbury, and Haverhill were actively engaged in the work. The famous frigate *Alliance* was built at Salisbury Point in 1778 and was the pride of the whole navy on account of her beauty and great speed. She was named in honor of the alliance between France and this country. The brig *Pickering* was built for the United States by the Merrills of Newburyport in 90 days and was sent to Boston, July 27, 1798, for her guns and crew. The ship *Merrimack* was built in 75 days at Newburyport and loaned to the Government, her keel being laid July 9 and her launching taking place Oct. 12, 1798. In 1799, the ship *Warren* was built by Daniel Webster at Salisbury under contract with the United States, and was launched September 26. In September, 1813, the United States sloop of war *Wasp* was launched from the yard of Orlando B. Merrill, Newburyport, and, about this time, two gunboats, numbered 81 and 82, were built in the town of Newbury by Stephen Coffin.

The first privateer fitted out within the limits of the original 13 colonies sailed from Newburyport in August, 1775, and was owned by Nathaniel Tracy. Privateers were built and fitted out at various other places; but the greater part of the regular ships of war constructed in the State were built in Boston and immediate vicinity. In Hart's shipyard, upon the site of which Constitution Wharf now stands, the frigate *Constitution* was built in 1797, and launched Oct. 21, 1798. The frigate *Boston* was built for the Government by subscription of the citizens of Boston at the same yard, the keel being laid Aug. 22, 1798, and the ship launched May 20, 1799, in the presence of John Adams, president of the United States. Among the other vessels built in Boston and vicinity under contract for the United States, or purchased after launching for the use of the Government, were the following: *Herald*, ship, launched 1798; *Essex*, ship, built at Salem, launched 1799; *Argus*, brig, launched 1803; *Spitfire*, ketch, launched 1805; *Vengeance*, bomb brig, launched 1805; *Frolic*, ship, launched 1813; *Rattlesnake*, brig, built at Medford, launched 1813; *Etna*, third of the name, bomb brig, launched 1846; *Stromboli*, bomb brig, launched 1846; *Edith*, steamer, launched 1847; and *Massachusetts*, transport steamer, ship rigged, built by Samuel Hall and E. H. Delano, launched 1845. In the war of 1812, Boston fitted out 31 privateers and Salem 40. At the

Charlestown Navy Yard,

which was established a hundred years ago for building, repairing, and equipping ships of war, there have been built 42 vessels of different rates and tonnage since it was first opened, the first ship having been launched in 1814. These vessels range from ships of the line down to small exploring brigs and barques, and include both steamers and sailing vessels, as will be seen by the following list:

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* According to Mrs. Martha J. Lamb's History of New York, this vessel was constructed from the burned hull of a Holland vessel called the *Tiger* and was renamed the *Restless*.

Name.	Description	Remarks
Sail.		
Independence,	Ship of the line,	Launched in 1814.
Vermont,	Ship of the line,	Begun in 1818, launched Sept. 14, 1848.
Alligator,	Schooner,	Launched Nov. 4, 1820.
Boston,	Ship,	Launched Oct. 16, 1825.
Cumberland,	Frigate, 1st class,	Begun in 1825, launched May 24, 1842.
Warren,	Sloop of war, 2nd class,	Begun in 1825, launched Nov. 29, 1826.
Falmouth,	Sloop of war, 2nd class,	Begun in 1826, launched Nov. 23, 1827.
Boxer,	Schooner-brig,	Launched Nov. 22, 1831.
Consort,	Bark for exploring expedition,	Launched Oct. 29, 1836.
Porpoise,	Brig,	Launched in 1836.
Cyane,	Sloop of war, 2nd class,	Launched Dec. 2, 1837.
Marion,	Sloop of war, 3rd class,	Begun in 1838, launched Apr. 24, 1839.
Bainbridge,	Brig,	Launched Apr. 26, 1842.
Erie,	Store ship,	Launched in 1842.
Plymouth,	Sloop of war, 1st class,	Launched Oct. 4, 1843.
Steam.		
John Hancock,	Screw cutter,	Begun, 1849; launched in 1850; lengthened in 1853.
Princeton,	Screw sloop, 3rd rate,	Launched 1851.
Merrimack,	Screw frigate,	Launched June 15, 1855.
Hartford,	Screw sloop,	Launched Nov. 22, 1858.
Narragansett,	Screw sloop, 2nd class,	Begun 1858, launched Feb. 15, 1859.
Wachusett,*	Screw sloop,	Launched Oct. 10, 1861.
Housatonic,*	Screw sloop,	Launched Nov. 20, 1861.
Maratanza,*	Paddle-wheel double ender,	Launched Nov. 26, 1861.
Canandaigua,*	Screw sloop,	Launched Mar. 28, 1862.
Genessee,*	Paddle-wheel double ender,	Launched Apr. 2, 1862.
Tioga,*	Paddle-wheel double ender,	Launched Apr. 18, 1862.
Tallapoosa,*	Side-wheel double ender,	Launched Feb. 17, 1863.
Pequot,*	Screw steamer, 4th rate,	Launched June 4, 1863.
Winooski,*	Paddle-wheel double ender,	Launched July 30, 1863.
Saco,*	Screw steamer, 4th rate,	Launched Aug. 28, 1863.
Monadnock,*	Double-turreted iron clad,	Launched Mar. 23, 1864.
Ammanoosuc,	Screw steamer,	Launched June 21, 1864.
Guerriere,*	Screw steamer, 1st rate,	Launched Sept. 2, 1865.
Manitou,	Screw steamer, 2nd rate,	Launched Aug. 25, 1866.
Nantasket,	Screw steamer, 3rd rate,	Launched Aug. 17, 1867.
Alaska,	Screw steamer, 2nd rate,	Launched Oct. 31, 1868.
Vandalia,	Screw steamer, 3rd rate,	Rebuilt to take the place of sailing vessel of same name which was broken up; keel laid in 1872, launched Oct. 28, 1874.
Intrepid,	Torpedo boat,	Keel laid 1872, launched Mar. 5, 1874.

* Engines for these vessels built outside of Navy Yard.

The following named vessels were begun at the Navy Yard, but never completed, and were finally broken up:

Virginia, sail, ship of the line; begun in 1818, broken up upon the stocks in 1883-84.

Pompanoosuc, screw steamer, first class; name changed to *Connecticut;* broken up in 1883-84.

Kewaydin, screw steamer, first class, name changed to *Pennsylvania;* broken up in 1883-84.

Quinsigamond, double-turreted iron clad, first rate; name changed to *Oregon;* broken up in 1883-84.

Of the ships built at the Navy Yard, the only one not constructed of wood was the screw torpedo boat *Intrepid*, which was built of iron, but for various reasons it was not deemed a success by Navy officers in general. It was totally unlike the modern torpedo boat, being a small slow steam war vessel of limited efficiency, supplied with auxiliary sail power, and a single tube for discharging torpedoes ahead.

East Boston

has for a long time been a shipbuilding centre, and although operations have been principally confined to building and repairing mercantile vessels, quite a number of steam vessels have been constructed for the United States Government, both of wood and metal. The first iron steamer built here was the *R. B. Forbes*, a large screw ocean tug of 329 gross tons, for the use of the underwriters of this port. This vessel was constructed by Otis Tufts and finished in 1845. It was supplied with twin screw propellers of Ericsson design, especially adapted for outside work in rough water, and lived long enough to be bought by the Government during the Rebellion and to take part in the capture of Port Royal. There was a small iron paddle-wheel steamer constructed in East Boston about 1857, called the *Argentina*, which was leased to the Government by Capt. Forbes and others, the owners, for surveys on the La Plata River, made by Capt. Page of the Navy; and, about a year later, another, called the *Alpha*, a small paddle-wheel iron steamer of 19 tons register, was transported to the same waters upon the deck of the brig *Nankin*, by the same owners, to be used on similar service. Both of these vessels were built in East Boston, and one of them, the *Argentina*, was partly constructed at the Atlantic Works. The other may have been built by Otis Tufts. Mr. Tufts did not have a regular shipyard, but was able to build small steam vessels from the fact that his plant had a frontage on the water and was readily accessible. A wooden vessel is said to have been built in East Boston for the Italian government in 1850, and Augustus & George T. Sampson built a large steam vessel for the Turkish government, designed for the use of the Viceroy of Egypt, about the same time. At the yards of

Donald McKay,

located on Meridian Street from 1846 to 1854, and on Border Street from that year until 1868, several United States Government vessels were built, although Mr. McKay's world-wide reputation was made by the sailing vessels constructed by him for the mercantile service. He did, however, build at the latter yard a light-draft monitor and the steam double-ender *Ashuelot* during the War of the Rebellion, and, about 1873-4, he built, on contract for the Government, the hull of the *Adams*, third rate, the Government furnishing most of, if not all, the materials. Campbell & Brooks, who succeeded Donald McKay at the plant on Border Street in 1868, built there the hull of the revenue cutter *Samuel Dexter* in 1873. The McKay plant was quite extensive, fronting 600 feet on Border Street and running back to the Harbor Commissioners' line on the water. Many mercantile vessels were built here, including Mr. McKay's masterpiece, the *Great Republic*, built in 1853, of 4,000 tons register, with four decks and four masts. In 1858,

Nathaniel McKay,

a brother of Donald, in company with a Mr. Gallagher, established a plant for the manufacture of boilers on Maverick and Border Streets, near the People's Ferry wharf, under the firm name of McKay & Gallagher. In 1860, on the retirement of Gallagher, the firm became McKay & Aldus. The scope of operations soon broadened into the building of machinery and iron vessels, many of which latter were constructed here for private owners, principally from New York. Several vessels for the Government were built here, viz.: the light-draft monitor *Squando*, and the *Phlox*, *Azalia*, and *Frederic W. Lincoln*. No sailing vessels were constructed. The plant, which was large enough to construct two vessels at a time, had no floating or dry dock, but these facilities were easily accessible. The firm went out of existence in 1866 and the plant became the property of the Atlantic Works in 1869.

Some other East Boston yards have constructed hulls for United States vessels, that of the revenue cutter *Rush* having been built by Smith & Townsend in 1873-5. Two large iron tugs, *Leyden* and *Palos*, still in the United States service, were built at Chelsea by James Tetlow about 1865-6. Mr. Tetlow was a boiler maker by trade, and had a small plant, including shop and wharf, near the present site of Campbell's coal yard, near the ferry, but

it was not originally designed for shipbuilding. The establishment which has, probably, executed the most Government work in East Boston is

The Atlantic Works,

incorporated May 2, 1853. The first plant occupied by this establishment was situated upon Chelsea Street, corner of Marion Street, at which place were constructed the iron steamers *Amoor*, *Ossuree*, *Delta*, and *Beta*, built for Russian and Chinese waters; the *Kilauea*, for the Sandwich Islands; and the *Pembroke*, for American owners. A composite iron and wood steamer, the *Niphon*, which afterwards became a United States blockading vessel during the Civil War, was also built here for American owners. All of these vessels were constructed previous to the Civil War. During that war, the iron monitors *Nantucket* and *Casco*, and the turrets for the monitors *Monadnock*, *Agamenticus*, *Passaconaway*, and *Shackamaxon* were built at this plant. In 1869, the corporation purchased the plant of McKay & Aldus, and in 1893, acquired the estate next south on New Street, upon which was then erected a brick and steel boiler shop, 100 x 226 feet, fitted with the most modern tools, making it equal in efficiency to any shop of its kind in the country. The present plant covers a large area, and is furnished throughout with the necessary tools and facilities for all kinds of marine work. It has traveling cranes in the machine and boiler shops, hydraulic and compressed air plants, flange machines, steam hammers, large rolls, marine railway, and iron shears at the end of its wharf capable of handling 100 tons. There is no dry or floating dock attached to the plant, but on an adjoining estate there are two large marine railways, and within a half mile is the Simpson dry dock, all of which are utilized when necessary.

There is extensive yard room and ample wharfage facilities for working upon several craft at the same time, and the plant is capable of constructing vessels complete, not exceeding 350 or 400 feet in length, of wood or metals, and it is especially adapted to the work of repairing steel hulls damaged by collision or otherwise, in which branch it has done a large amount of work during the past quarter of a century. The accessibility of the plant to persons for whom construction or repairing is being done, and its propinquity to the markets for labor and materials, have always had their advantages. Since the establishment of the later plant, the company has constructed the iron brig *Novelty*, 358 tons, for the transportation of molasses in bulk, and the iron steamer *William Lawrence*, 1,049 tons, for the Boston & Baltimore Line, in 1869, and, for the Government, the famous dredge boat, the *Essayons*, for use at the mouth of the Mississippi, in 1868, also the wooden steam revenue cutters *Rush* and *Samuel Dexter* (machinery built on the plant) in 1873-4, and the composite steam revenue cutter *Daniel Manning* in 1897. In addition, the company has built a fire boat, two police boats, and two quarantine boats (all steamers) for the city of Boston, 40 wooden tug boats, three steel and three wooden yachts for private parties; and they have now (March, 1901), under construction the steel and bronze yacht *Independence*, built as a possible defender of the American "Cup." Besides the above, the company has been extensively engaged in building marine machinery, including the engines and boilers for the war ships *Canandaigua*, *Sagamore*, *Sassacus*, and *Osceola* built during the War of the Rebellion; the *Franklin*, immediately after the close of that war; and the *Adams* and *Essex*, the hulls of all these vessels having been constructed elsewhere. The advantages which obtain in East Boston for shipbuilding are approached, in a measure, by those of

SOUTH BOSTON

where, in 1842, was built the first iron steamer in New England. This was the *McLane*, constructed by Jabez Coney for the United States, and designed for the Revenue Service. The *McLane* was 142 feet 9 inches long, 22 feet 2 inches broad, and had a depth of hold of 11 feet 11 inches. She was clincher built, wholly of wrought iron, and was propelled by Hunter wheels, that is, paddle wheels let into the side of the ship working horizontally and driven by horizontal engines. The vessel after being launched was tied up for a long time at Coney's wharf at the North End. The engines not proving a success, she was taken back to Coney's works and vertical paddle wheels substituted and operated by means of gearing. The ship served in the Mexican War and was engaged in the bombardment of Vera Cruz and Alvarado where her heavy batteries proved of great value. Shortly after the close of the war, the ship was sold by the Government, her engines taken out and used on a sugar plantation, and the hull devoted to other purposes. Mr. Coney had no regular shipbuilding plant, but carried on a machine shop on Foundry Street, near the water. He also built the engines for the United States steamer *Saranac*.

The first iron vessels constructed in this country of which there are any known records were the steamers *John Randolph*, 122 tons; *Chatham*, 198 tons; and *Lamar*, 196 tons; all built at Savannah, Ga., in the years 1834, 1836, and 1838, respectively. They were built of iron imported from Liverpool, England. The first iron vessel constructed in this country of iron manufactured in the United States was the *Valley Forge*, a steamer of 199 tons, built by Thomas Baldwin at Pittsburg, Penn., in 1839. The first iron vessels built and documented in the United States were the steamers *Black Diamond*, *Vulcan*, *Ironsides*, and *Anthracite*, which were built by James Cunningham, in New York, in 1842. They were all of the same size, viz.: 137 gross tons, were propelled by screws, and were used in the coal carrying trade between New York and Philadelphia.

From the foregoing, it will be seen that in the construction of the *McLane*, Massachusetts practically entered the field of iron steamship building while it was in its earliest infancy in this country, and up to the War of the Rebellion Boston was one of, if not the foremost city in the Union in the line of building iron steam craft. These early builders were enterprising and daring, and single contracts for construction often ran as high as half a million dollars notwithstanding the limited size of the plants. Other machine shops later on built engines and boilers for Government craft, and, in 1864, Aquilla Adams constructed a light-draft monitor at his plant on First and L Street, which he occupied, together with a foundry on Fourth Street, for about two years. The first regular iron shipbuilding plant established in New England was that of

Harrison Loring,

located in South Boston near the Point, and called the City Point Works. Mr. Loring had for a number of years carried on machinists' work on First Street near Dorchester Avenue, when, in 1857, he built the plant now under consideration. It embraced seven acres of land located on First Street near the present House of Correction. There were 2 large ship houses in immediate connection having machine, boiler, and blacksmith shops. There was a water frontage of 550 feet, upon which he built a pier 700 feet in length, which increased in large measure the efficiency of the plant for repair work. The shops were supplied with the best tools of the day, and both steam and sailing vessels of iron were constructed. An iron steamer called the *Sestos* was built here in 1857–8 for the Hooghly River in India, and was the first built on the Scotch and English principle of framing with angle iron. Previous to this, vessels had been framed in this country with flat iron, to which the plates were fastened by means of iron straps passing over the bars and riveted to the plates. The *Sestos* proved so great a success that it was duplicated in the *Contest* a year later for the same owners.

In 1859–60 two iron paddle-wheel vessels, the *Massachusetts* and *South Carolina*, were constructed to ply between Boston and Charleston, S. C., and were the first vessels purchased by the United States during the Civil War. They were used continuously as blockading ships on the Southern coast until the close of the war. Immediately after these steamers, Mr. Loring built the two iron screw steamers *Merrimac* and *Mississippi*, of 2,000 tons each, which were used by the Government as transports; they were very strong and, for their day, very fast. Between 1861 and 1865, two monitors, *Canonicus* and *Nahant*, and the double-ender *Winnipeg*, the latter for Southern river service, were built. Later numerous tug boats were constructed, and, about 1890, three composite lightships were built for Government service. Between 1890 and 1893, three steel tugs for the navy were built, viz.: *Iwana*, *Narkeeta*, and *Juanita*, and the 2,000-ton cruiser *Marblehead* which took a prominent part in the recent Spanish-American War. Within a few years the plant has been converted to other uses.

In addition to the complete vessels built at the Loring works, the Government steamer *John Hancock* was remodelled in 1853, and one of the first surface condensers made was placed in the ship. The machinery for the *Hartford*, Admiral Farragut's flagship, was finished at these works in 1858, and placed aboard the ship, and between 1862 and 1865 the machinery for the *Kewaydin* was constructed here and sent to the Navy Yard for storage, as, owing to the close of the war, the vessel was never finished. About 1880, these engines were placed in the *Hartford*, where they did service until recently, when the ship was reconstructed.

Quincy.

In 1884, there was established at East Braintree, a small business known as the Fore River Engine Co., occupying a shop about 25 feet square, to manufacture small marine engines of about 200 horse power capacity, as well as other machinery. In February, 1901, this company reorganized under the laws of New Jersey as the

Fore River Ship and Engine Company,

for the purpose of carrying out a contract for two of the largest battle ships ever constructed in the United States. Under its old title, in 1899, the company obtained a contract to construct two 400-ton torpedo boat destroyers for the United States Government, and, early in 1900, they were awarded the contract for the 3,500-ton protected cruiser *Des Moines*. In this same year they completed a 600-ton light-ship for the Government, and in February, 1901, were awarded the contract for the two 15,000-ton battle ships before mentioned.

In this connection, it is interesting to note the rapid progress made by this establishment since it began operations in 1884. At that time the company occupied a very small plant and employed during the first year only 6 men, while the value of the product did not exceed $10,000. In 1886, a building 100 x 50 feet was added, a large number of up-to-date machine tools were purchased, and the land area increased to two acres. In 1890, the company began building the hulls of yachts and tugs, in addition to the machinery, the largest being about 100 tons. Previous to this, the number of employés had been gradually increased from 6 to 200, and during 1900 the maximum number reached 500. At the present time (March, 1901), 600 hands are employed, and by the end of this year, in consequence of the Government contracts secured, the force will be increased to 1,500; while in 1902 it is contemplated to have 2,500 men at work. This, it is expected, will be the greatest number employed at one time, and will mean the probable distribution of over $50,000 in wages each week.

In 1900, the company designed and entered upon the construction of its great shipbuilding plant at Quincy Point. This action was taken in order to acquire more room and greater depth of water, and also because the tools to be installed for the construction of the 3,500-ton cruiser were heavy enough to build much larger ships, and it was not deemed advisable to set up such appliances in a locality where they could not be fully utilized. The plant when completed will be the largest in the United States, and capable of finishing complete the largest mercantile or war ship yet designed. Work of a wider scope can be carried on here than in any other shipbuilding plant in this country, since it is the only establishment having steam hammers large enough to make the heaviest forgings needed for the largest ships, including the propeller shafts, it being possible to forge a steel ingot weighing 40 tons. In addition to this, the company constructs for the vessels built, all the auxiliary machinery such as steam pumps, electric-light engines, steering engines, etc.

The area embraced by the plant is 75 acres, including docks. The buildings, which are of wood, are very systematically arranged and consist of forge, boiler, machine, joiner, and carpenter shops, storehouse, foundry, tool house, restaurant, and office. It is equipped with electric light, which is manufactured on the premises. All heavy machine and shipbuilding tools are operated by independent electric motors, instead of being driven by belts, while the small machine tools are arranged in groups under short shafts, each shaft being run by an electric motor. The plan of the plant includes a floating dock which will be constructed within two years.

The addition of this great establishment to the industries of Massachusetts, with its large expenditure for labor, should be of great benefit to our workingmen, and marks a new era in the shipbuilding industry of the Commonwealth.

Part II.

STATISTICS OF MANUFACTURES.

1899, 1900.

Introduction.
Establishments and their Management.
Investment, Materials Used, and Product.
Labor and its Compensation.
Working Time and Proportion of Business Done.
General Summary of Industrial Conditions.

Part II.

Statistics of Manufactures. 1899, 1900.

Introduction.

This Part contains the fifteenth report of the Annual Statistics of Manufactures, issued in accordance with the provisions of Chapter 174 of the Acts of 1886.

The statistical presentations have been prepared from the returns made by 4,645 identical establishments covering each of the years 1899 and 1900, and are arranged in five sections.

The first exhibits data relating to the management of 4,645 establishments, and shows the number of establishments controlled by private firms, corporations, and industrial combinations, together with the number of partners and stockholders interested therein, separated as to males, females, estates, banks, trustees, etc. The second covers the amount of capital invested, the value of stock or materials used, and the value of goods made and work done. The third, the number of persons employed (average, smallest, and greatest); the range of employment and unemployment for certain industries, by months; the total amount paid in wages; the average amount earned annually by each employé, without regard to sex or age; and the classified weekly wages for certain industries. The fourth section shows the average number of days in operation, and the average proportion of business done; while the fifth contains a general summary of industrial conditions based upon the returns made by the 4,645 identical establishments.

The term "All Industries" used in these reports for aggregates refers only to the numerical totals of the various columns and *not* to the total investment, production, persons employed, wages paid, etc., of *all* the establishments engaged

in the manufacturing and mechanical industries of the State. Totals of this nature are only presented in the Decennial Census reports once in ten years. Wherever, therefore, All Industries are mentioned in this Part, it is to be understood that the 87 classified industries shown in the table on pages 66 and 67 are referred to; and where numerical aggregates are presented for All Industries or for any single industry, whether for capital invested, goods made, persons employed, wages paid, etc., only such aggregates are intended as are derived from the 4,645 establishments each of which made returns for the years 1899 and 1900, and for which it is possible to make comparisons, unless some other meaning is distinctly stated in the text.

Establishments and Their Management.

Wherever the word "Establishment" is used in this Part, it is to be understood as meaning the factory, mill, or shop from which a report has been secured, and not the firm or corporation controlling said factory, mill, or shop. The following table exhibits the number of returns compared in each year since the first publication of these annual reports:

Years.	Number of Establishments Considered	Years.	Number of Establishments Considered
1886, 1887, ...	1,027	1894, ...	4,093
1888, ...	1,140	1895, ...	3,629
1889, ...	1,364	1896, ...	4,609
1890, ...	3,041	1897, ...	4,695
1891, ...	3,745	1898, ...	4,701
1892, ...	4,473	1899, ...	4,740
1893, ...	4,397	1900, ...	4,645

The presentations covering the data relating to the establishments and their management are arranged as follows:

1. The total number of establishments considered; the number of establishments controlled by private firms, corporations, and industrial combinations, respectively; and the number of such private firms, corporations, and industrial combinations for each of the years 1899 and 1900.

2. The number of male and female partners, the number of special partners, and the number of estates engaged in carrying on the private firms.

3. The number of males and females, and the number of banks, trustees, etc., interested in the management of the corporations as stockholders.

Attention is called to the head-notes on pages 66 and 68, in which it is stated that certain unavoidable duplications occur in the columns devoted to private firms, corporations, and industrial combinations; and to the head-notes on pages 74 and 76, in which the omission of stockholders for industrial combinations is explained.

PRIVATE FIRMS, CORPORATIONS, ETC.: BY INDUSTRIES.

1899.

[This presentation shows the aggregate number of establishments considered, the number of these establishments which are conducted by private firms; by corporations; and by industrial combinations, together with the actual number of such firms, corporations, and combinations. There are certain duplications in management, caused by the fact that the same firm, corporation, or combination is often engaged in manufacturing in more than one industry. The industries in which they occur have been indicated by an asterisk (*) and the plan adopted in such cases has been to consider each establishment, whether managed in connection with another or not, as a unit, and to credit the entire number of firms, etc., to each industry. The last three columns of the table show the actual number of firms, corporations, and combinations, all duplications having been eliminated except as they occur between the industries, and in making up the total for All Industries these duplications, too, have been omitted; so that the final line in the table shows the exact number of different private firms, corporations, and industrial combinations conducting the specified number of establishments.]

Industries.	Number of Establishments Considered	Establishments Conducted by—			Number of—		
		Private Firms	Corporations	Industrial Combinations	Firms	Corporations	Combinations
Agricultural implements,	9	4	5	–	4	5	–
Arms and ammunition,	13	7	6	–	7	6	–
Artisans' tools,*	78	57	19	2	57	19	1
Awnings, sails, tents, etc.,	36	36	–	–	36	–	–
Bicycles, tricycles, etc.,	12	6	3	3	6	3	1
Boots and shoes,*	673	584	89	–	584	86	–
Boots and shoes (factory product),*	445	372	73	–	372	70	–
Soles, heels, and cut stock,*	191	178	13	–	178	13	–
Boot and shoe findings,	24	21	3	–	21	3	–
Stitching, heeling, etc.,	13	13	–	–	13	–	–
Boxes, barrels, kegs, etc.,*	114	102	12	–	101	11	–
Boxes (paper),*	67	56	11	–	56	11	–
Brick, tiles, and sewer pipe,*	64	51	13	–	51	12	–
Brooms, brushes, and mops,	23	19	4	–	19	4	–
Building materials,	47	34	13	–	34	13	–
Burial cases, caskets, coffins, etc.,	6	4	2	–	4	2	–
Buttons and dress trimmings,	15	5	10	–	5	10	–
Carpetings,	12	3	9	–	2	9	–
Carriages and wagons,*	124	113	11	–	113	11	–
Cement, kaolin, lime, and plaster,	9	6	3	–	6	3	–
Chemical preparations (compounded),	12	6	6	–	6	6	–
Clocks and watches,	10	8	2	–	8	2	–
Clothing,	150	119	31	–	119	31	–
Cooking, lighting, and heating apparatus,*	43	23	20	–	23	20	–
Cordage and twine,	21	12	9	–	12	9	–
Cotton goods,*	162	29	125	8	29	121	1
Cotton goods (woven),*	115	11	104	–	11	100	–
Cotton yarn and thread,*	39	13	18	8	13	18	1
Cotton waste,*	8	5	3	–	5	3	–
Crayons, pencils, crucibles, etc.,	4	2	2	–	2	2	–
Drugs and medicines,	21	12	9	–	12	9	–
Dyestuffs,	6	4	2	–	4	2	–
Earthen, plaster, and stone ware,	10	9	1	–	9	1	–
Electrical apparatus and appliances,	19	4	15	–	4	15	–
Electroplating,*	12	12	–	–	12	–	–
Emery and sand paper and cloth, etc.,	9	1	8	–	1	8	–
Fancy articles, etc.,	14	12	2	–	12	2	–
Fertilizers,	6	3	3	–	3	3	–

PRIVATE FIRMS, ETC.: BY INDUSTRIES — 1899 — Concluded.

Industries.	Number of Establishments Considered	Establishments Conducted by —			Number of —		
		Private Firms	Corporations	Industrial Combinations	Firms	Corporations	Combinations
Fine arts and taxidermy,	3	2	1	–	2	1	–
Fireworks and matches,	3	2	1	–	2	1	–
Flax, hemp, and jute goods,	9	3	6	–	3	6	–
Food preparations,*	341	287	46	8	287	45	2
Furniture,	129	105	24	–	105	23	–
Glass,	12	10	2	–	10	2	–
Glue, isinglass, and starch,	19	12	7	–	12	7	–
Hair work (animal and human),	4	4	–	–	4	–	–
Hose: rubber, linen, etc.,	5	4	1	–	4	1	–
Hosiery and knit goods,	34	17	17	–	17	17	–
Ink, mucilage, and paste,	7	6	1	–	6	1	–
Ivory, bone, shell, and horn goods, etc.,	23	18	5	–	18	5	–
Jewelry,	97	84	13	–	84	13	–
Leather,	90	76	12	2	76	12	1
Leather goods,	26	18	8	–	18	7	–
Liquors (bottled) and carbonated beverages,	29	22	7	–	22	7	–
Liquors (malt),	39	6	29	4	6	26	2
Liquors (distilled),	6	6	–	–	6	–	–
Lumber,*	27	22	5	–	22	4	–
Machines and machinery,*	358	219	132	7	219	126	3
Metals and metallic goods,*	374	257	116	1	255	114	1
Models, lasts, and patterns,*	46	42	4	–	42	4	–
Musical instruments and materials,	51	31	20	–	31	20	–
Oils and illuminating fluids,	10	8	2	–	8	2	–
Paints, colors, and crude chemicals,	29	19	9	1	19	9	1
Paper,*	75	18	34	23	18	31	2
Paper goods,	40	16	16	8	16	16	2
Perfumes, toilet articles, etc.,	4	4	–	–	4	–	–
Photographs and photographic materials,	19	16	3	–	16	3	–
Polishes and dressing,*	31	25	6	–	25	6	–
Printing, publishing, and bookbinding,	59	35	24	–	35	24	–
Print works, dye works, and bleacheries,*	46	26	20	–	26	20	–
Railroad construction and equipment,	15	3	12	–	3	†7	–
Rubber and elastic goods,*	44	20	22	2	19	22	1
Saddlery and harness,	30	28	2	–	28	2	–
Scientific instruments and appliances,	21	15	6	–	15	6	–
Shipbuilding,	48	44	4	–	44	4	–
Silk and silk goods,	11	4	7	–	4	7	–
Sporting and athletic goods,	7	4	3	–	4	3	–
Stone,	197	180	17	–	180	17	–
Quarried,	47	36	11	–	36	11	–
Cut and monumental,	150	144	6	–	144	6	–
Straw and palm leaf goods,	19	15	4	–	15	4	–
Tallow, candles, soap, and grease,*	56	49	7	–	49	7	–
Tobacco, snuff, and cigars,	74	67	7	–	67	7	–
Toys and games (children's),	11	6	5	–	6	5	–
Trunks and valises,	7	7	–	–	7	–	–
Whips, lashes, and stocks,	11	6	5	–	6	5	–
Wooden goods,	74	61	12	1	61	12	1
Woollen goods,*	140	82	49	9	79	48	4
Woven goods and yarn,*	116	63	44	9	60	43	4
Shoddy, waste, etc.,	24	19	5	–	19	5	–
Worsted goods,*	34	14	15	5	14	15	1
All Industries,	4,645	3,368	1,193	84	3,352	1,150	22

† Includes 3 railroad corporations.

PRIVATE FIRMS, CORPORATIONS, ETC.: BY INDUSTRIES.

1900.

[This presentation shows the aggregate number of establishments considered, the number of these establishments which are conducted by private firms; by corporations; and by industrial combinations, together with the actual number of such firms, corporations, and combinations. There are certain duplications in management, caused by the fact that the same firm, corporation, or combination is often engaged in manufacturing in more than one industry. The industries in which they occur have been indicated by an asterisk (*), and the plan adopted in such cases has been to consider each establishment, whether managed in connection with another or not, as a unit, and to credit the entire number of firms, etc. to each industry. The last three columns of the table show the actual number of firms, corporations, and combinations, all duplications having been eliminated except as they occur between the industries, and in making up the total for All Industries these duplications, too, have been omitted; so that the final line in the table shows the exact number of different private firms, corporations, and industrial combinations conducting the specified number of establishments.]

Industries.	Number of Establishments Considered	Establishments Conducted by—			Number of—		
		Private Firms	Corporations	Industrial Combinations	Firms	Corporations	Combinations
Agricultural implements,	9	4	5	–	4	5	–
Arms and ammunition,	13	7	6	–	7	6	–
Artisans' tools,*	78	57	19	2	57	19	1
Awnings, sails, tents, etc.,	36	36	–	–	36	–	–
Bicycles, tricycles, etc.,	12	5	4	3	5	4	1
Boots and shoes,*	673	575	98	–	575	95	–
Boots and shoes (factory product),*	445	365	80	–	365	77	–
Soles, heels, and cut stock,*	191	176	15	–	176	15	–
Boot and shoe findings,	24	21	3	–	21	3	–
Stitching, heeling, etc.,	13	13	–	–	13	–	–
Boxes, barrels, kegs, etc.,*	114	102	12	–	101	11	–
Boxes (paper),*	67	57	10	–	56	10	–
Brick, tiles, and sewer pipe,*	64	50	14	–	50	13	–
Brooms, brushes, and mops,	23	18	5	–	18	5	–
Building materials,	47	34	13	–	34	13	–
Burial cases, caskets, coffins, etc.,	6	4	2	–	4	2	–
Buttons and dress trimmings,	15	5	10	–	5	10	–
Carpetings,	12	2	10	–	2	8	–
Carriages and wagons,*	124	110	14	–	110	14	–
Cement, kaolin, lime, and plaster,	9	6	3	–	6	3	–
Chemical preparations (compounded),	12	6	6	–	6	6	–
Clocks and watches,	10	8	2	–	8	2	–
Clothing,	150	115	35	–	115	34	–
Cooking, lighting, and heating apparatus,*	43	23	20	–	23	20	–
Cordage and twine,	21	12	9	–	12	9	–
Cotton goods,*	162	28	126	8	28	122	1
Cotton goods (woven),*	115	10	105	–	10	101	–
Cotton yarn and thread,*	39	13	18	8	13	18	1
Cotton waste,*	8	5	3	–	5	3	–
Crayons, pencils, crucibles, etc.,	4	2	2	–	2	2	–
Drugs and medicines,	21	11	10	–	11	10	–
Dyestuffs,	6	4	2	–	4	2	–
Earthen, plaster, and stone ware,	10	9	1	–	9	1	–
Electrical apparatus and appliances,	19	4	15	–	4	15	–
Electroplating,*	12	11	1	–	11	1	–
Emery and sand paper and cloth, etc.,	9	1	8	–	1	8	–
Fancy articles, etc.,	14	11	3	–	11	3	–
Fertilizers,	6	3	3	–	3	3	–

PRIVATE FIRMS, ETC.: BY INDUSTRIES — 1900 — Concluded.

Industries.	Number of Establishments Considered	Establishments Conducted by—			Number of—		
		Private Firms	Corporations	Industrial Combinations	Firms	Corporations	Combinations
Fine arts and taxidermy,	3	2	1	–	2	1	–
Fireworks and matches,	3	2	1	–	2	1	–
Flax, hemp, and jute goods,	9	3	6	–	3	6	–
Food preparations,*	341	285	48	8	285	47	2
Furniture,	129	104	25	–	104	24	–
Glass,	12	10	2	–	10	2	–
Glue, isinglass, and starch,	19	12	7	–	12	7	–
Hair work (animal and human),	4	4	–	–	4	–	–
Hose: rubber, linen, etc.,	5	4	1	–	4	1	–
Hosiery and knit goods,	34	16	18	–	16	18	–
Ink, mucilage, and paste,	7	6	1	–	6	1	–
Ivory, bone, shell, and horn goods, etc.,	23	16	7	–	16	7	–
Jewelry,	97	82	15	–	82	15	–
Leather,	90	74	14	2	74	14	1
Leather goods,	26	17	9	–	17	8	–
Liquors (bottled) and carbonated beverages,	29	21	8	–	21	8	–
Liquors (malt),	39	5	30	4	5	18	2
Liquors (distilled),	6	5	1	–	5	1	–
Lumber,*	27	21	6	–	21	5	–
Machines and machinery,*	358	214	136	8	214	131	3
Metals and metallic goods,*	374	250	123	1	247	121	1
Models, lasts, and patterns,*	46	41	5	–	41	5	–
Musical instruments and materials,	51	31	20	–	31	20	–
Oils and illuminating fluids,	10	8	2	–	8	2	–
Paints, colors, and crude chemicals,	29	18	10	1	18	10	1
Paper,*	75	17	36	22	17	33	2
Paper goods,	40	16	16	8	16	16	2
Perfumes, toilet articles, etc.,	4	4	–	–	4	–	–
Photographs and photographic materials,	19	16	3	–	16	3	–
Polishes and dressing,*	31	23	8	–	23	8	–
Printing, publishing, and bookbinding,	59	35	24	–	35	24	–
Print works, dye works, and bleacheries,*	46	25	21	–	25	21	–
Railroad construction and equipment,	15	3	12	–	3	†7	–
Rubber and elastic goods,*	44	20	22	2	19	22	1
Saddlery and harness,	30	27	3	–	27	3	–
Scientific instruments and appliances,	21	15	6	–	15	6	–
Shipbuilding,	48	44	4	–	44	4	–
Silk and silk goods,	11	4	7	–	4	7	–
Sporting and athletic goods,	7	3	4	–	3	4	–
Stone,	197	177	20	–	177	15	–
Quarried,	47	31	16	–	31	11	–
Cut and monumental,	150	146	4	–	146	4	–
Straw and palm leaf goods,	19	15	4	–	15	4	–
Tallow, candles, soap, and grease,*	56	48	8	–	48	8	–
Tobacco, snuff, and cigars,	74	67	7	–	67	7	–
Toys and games (children's),	11	6	5	–	6	5	–
Trunks and valises,	7	7	–	–	7	–	–
Whips, lashes, and stocks,	11	6	5	–	6	5	–
Wooden goods,	74	61	12	1	61	12	1
Woollen goods,*	140	76	55	9	75	52	4
Woven goods and yarn,*	116	58	49	9	57	46	4
Shoddy, waste, etc.,	24	18	6	–	18	6	–
Worsted goods,*	34	15	14	5	15	14	1
All Industries,	4,645	3,301	1,260	84	3,286	1,199	22

† Includes 3 railroad corporations.

PARTNERS: BY INDUSTRIES.

1899.

[This presentation shows the number of partners comprising the 3,352 private firms engaged in the management of the 3,368 establishments. As explained in the preceding presentation, duplications in partners occur in the industries indicated by an asterisk (*), since the same firm is sometimes engaged in more than one industry, and the plan, as stated, has been to consider each establishment as a unit and to credit thereto the whole number of partners, but in making up the total for All Industries to omit duplications; so that the final line in the table shows the exact number of partners conducting the specified number of private firms.]

Industries.	Number of Private Firms	Number of Partners				
		Males	Females	Special	Estates	Totals
Agricultural implements,	4	5	–	–	–	5
Arms and ammunition,	7	10	1	–	1	12
Artisans' tools,	57	82	1	–	–	83
Awnings, sails, tents, etc.,	36	45	1	–	1	47
Bicycles, tricycles, etc.,	6	8	–	–	–	8
Boots and shoes,*	584	945	19	11	7	982
Boots and shoes (factory product),	372	643	13	10	4	670
Soles, heels, and cut stock,*	178	254	5	1	3	263
Boot and shoe findings,	21	31	–	–	–	31
Stitching, heeling, etc.,	13	17	1	–	–	18
Boxes, barrels, kegs, etc.,*	101	137	3	2	3	145
Boxes (paper),	56	72	5	1	–	78
Brick, tiles, and sewer pipe,	51	75	8	–	2	85
Brooms, brushes, and mops,	19	25	–	–	1	26
Building materials,	34	50	1	–	–	51
Burial cases, caskets, coffins, etc.,	4	8	–	–	–	8
Buttons and dress trimmings,	5	7	1	–	–	8
Carpetings,	2	5	–	–	–	5
Carriages and wagons,*	113	167	–	–	5	172
Cement, kaolin, lime, and plaster,	6	10	–	–	1	11
Chemical preparations (compounded),	6	8	1	–	–	9
Clocks and watches,	8	13	–	–	–	13
Clothing,	119	217	2	2	2	223
Cooking, lighting, and heating apparatus,	23	33	1	–	1	35
Cordage and twine,	12	17	1	2	1	21
Cotton goods,*	29	46	9	–	2	57
Cotton goods (woven),	11	22	6	–	–	28
Cotton yarn and thread,	13	16	3	–	2	21
Cotton waste,*	5	8	–	–	–	8
Crayons, pencils, crucibles, etc.,	2	2	–	–	–	2
Drugs and medicines,	12	13	–	–	1	14
Dyestuffs,	4	7	–	–	–	7
Earthen, plaster, and stone ware,	9	9	–	–	–	9
Electrical apparatus and appliances,	4	6	–	–	–	6
Electroplating,*	12	14	–	–	–	14
Emery and sand paper and cloth, etc.,	1	1	–	–	–	1
Fancy articles, etc.,	12	14	1	–	–	15
Fertilizers,	3	5	–	–	–	5
Fine arts and taxidermy,	2	3	–	–	–	3
Fire works and matches,	2	4	–	–	–	4

PARTNERS: BY INDUSTRIES. **1899**—Concluded.

Industries.	Number of Private Firms	Number of Partners				
		Males	Females	Special	Estates	Totals
Flax, hemp, and jute goods,	3	5	–	–	–	5
Food preparations,*	287	369	8	2	12	391
Furniture,	105	162	7	1	2	172
Glass,	10	16	1	–	–	17
Glue, isinglass, and starch,	12	22	1	–	–	23
Hair work (animal and human),	4	3	1	–	–	4
Hose: rubber, linen, etc.,	4	5	–	–	–	5
Hosiery and knit goods,	17	26	1	1	–	28
Ink, mucilage, and paste,	6	8	–	–	–	8
Ivory, bone, shell, and horn goods, etc.,	18	28	–	–	–	28
Jewelry,	84	159	9	3	–	171
Leather,	76	119	1	1	–	121
Leather goods,	18	29	–	3	–	32
Liquors (bottled) and carbonated beverages,	22	27	5	–	1	33
Liquors (malt),	6	10	5	–	–	15
Liquors (distilled),	6	10	–	–	3	13
Lumber,*	22	30	1	–	2	33
Machines and machinery,*	219	327	9	–	5	341
Metals and metallic goods,*	255	357	9	3	7	376
Models, lasts, and patterns,	42	69	1	–	–	70
Musical instruments and materials,	31	46	1	–	–	47
Oils and illuminating fluids,	8	10	–	–	–	10
Paints, colors, and crude chemicals,	19	34	–	–	–	34
Paper,*	18	38	–	–	3	41
Paper goods,	16	25	–	–	–	25
Perfumes, toilet articles, etc.,	4	4	–	–	–	4
Photographs and photographic materials,	16	19	1	–	–	20
Polishes and dressing,*	25	43	1	–	1	45
Printing, publishing, and bookbinding,	35	63	3	–	1	67
Print works, dye works, and bleacheries,	26	33	4	–	1	38
Railroad construction and equipment,	3	3	–	–	–	3
Rubber and elastic goods,	19	37	1	–	2	40
Saddlery and harness,	28	35	–	–	–	35
Scientific instruments and appliances,	15	22	–	–	–	22
Shipbuilding,	44	58	–	–	1	59
Silk and silk goods,	4	6	–	–	–	6
Sporting and athletic goods,	4	4	–	–	–	4
Stone,	180	252	7	–	5	264
Quarried,	36	51	3	–	2	56
Cut and monumental,	144	201	4	–	3	208
Straw and palm leaf goods,	15	31	–	–	–	31
Tallow, candles, soap, and grease,*	49	70	–	–	3	73
Tobacco, snuff, and cigars,	67	93	3	1	–	97
Toys and games (children's),	6	11	2	–	–	13
Trunks and valises,	7	12	–	–	–	12
Whips, lashes, and stocks,	6	9	1	–	–	10
Wooden goods,	61	79	3	–	2	84
Woollen goods,	79	112	4	–	1	117
Woven goods and yarn,	60	88	3	–	1	92
Shoddy, waste, etc.,	19	24	1	–	–	25
Worsted goods,	14	28	1	–	–	29
All Industries,	3,352	5,012	146	33	78	5,269

PARTNERS: BY INDUSTRIES.

1900.

[This presentation shows the number of partners comprising the 3,286 private firms engaged in the management of the 3,301 establishments. As explained in the preceding presentation, duplications in partners occur in the industries indicated by an asterisk (*), since the same firm is sometimes engaged in more than one industry, and the plan, as stated, has been to consider each establishment as a unit and to credit thereto the whole number of partners, but in making up the total for All Industries to omit duplications; so that the final line in the table shows the exact number of partners conducting the specified number of private firms.]

Industries.	Number of Private Firms	Number of Partners				
		Males	Females	Special	Estates	Totals
Agricultural implements,	4	5	-	-	-	5
Arms and ammunition,	7	10	-	-	2	12
Artisans' tools,	57	75	2	-	2	79
Awnings, sails, tents, etc.,	36	47	1	-	-	48
Bicycles, tricycles, etc.,	5	7	-	-	-	7
Boots and shoes,*	575	927	21	9	5	962
Boots and shoes (factory product),	365	627	14	8	2	651
Soles, heels, and cut stock,*	176	251	6	1	3	261
Boot and shoe findings,	21	32	-	-	-	32
Stitching, heeling, etc.,	13	17	1	-	-	18
Boxes, barrels, kegs, etc.,*	101	131	3	1	2	137
Boxes (paper),	56	73	5	1	-	79
Brick, tiles, and sewer pipe,	50	71	5	-	2	78
Brooms, brushes, and mops,	18	23	1	-	1	25
Building materials,	34	50	1	-	-	51
Burial cases, caskets, coffins, etc.,	4	8	-	-	-	8
Buttons and dress trimmings,	5	6	1	-	-	7
Carpetings,	2	5	-	-	-	5
Carriages and wagons,*	110	164	-	1	2	167
Cement, kaolin, lime, and plaster,	6	10	-	-	1	11
Chemical preparations (compounded),	6	8	1	-	-	9
Clocks and watches,	8	13	-	-	-	13
Clothing,	115	207	5	2	2	216
Cooking, lighting, and heating apparatus,	23	30	1	1	1	33
Cordage and twine,	12	16	2	2	-	20
Cotton goods,*	28	42	9	-	2	53
Cotton goods (woven),	10	19	6	-	-	25
Cotton yarn and thread,	13	15	3	-	2	20
Cotton waste,*	5	8	-	-	-	8
Crayons, pencils, crucibles, etc.,	2	2	-	-	-	2
Drugs and medicines,	11	12	-	-	1	13
Dyestuffs,	4	7	-	-	-	7
Earthen, plaster, and stone ware,	9	9	-	-	-	9
Electrical apparatus and appliances,	4	6	-	-	-	6
Electroplating,*	11	12	-	-	1	13
Emery and sand paper and cloth, etc.,	1	1	-	-	-	1
Fancy articles, etc.,	11	13	1	-	-	14
Fertilizers,	3	5	-	-	-	5
Fine arts and taxidermy,	2	3	-	-	-	3
Fireworks and matches,	2	4	-	-	-	4

PARTNERS: BY INDUSTRIES. **1900** — Concluded.

Industries.	Number of Private Firms	Number of Partners				
		Males	Females	Special	Estates	Totals
Flax, hemp, and jute goods,	3	5	–	–	–	5
Food preparations,*	285	367	14	2	10	393
Furniture,	104	158	7	1	1	167
Glass,	10	15	2	–	–	17
Glue, isinglass, and starch,	12	22	1	–	–	23
Hair work (animal and human),	4	3	1	–	–	4
Hose: rubber, linen, etc.,	4	4	–	–	1	5
Hosiery and knit goods,	16	27	1	1	–	29
Ink, mucilage, and paste,	6	9	–	–	–	9
Ivory, bone, shell, and horn goods, etc.,	16	25	–	–	1	26
Jewelry,	82	146	7	2	3	158
Leather,	74	115	1	–	–	116
Leather goods,	17	27	–	3	–	30
Liquors (bottled) and carbonated beverages,	21	25	6	–	1	32
Liquors (malt),	5	8	5	–	–	13
Liquors (distilled),	5	10	–	–	–	10
Lumber,*	21	31	5	–	–	36
Machines and machinery,*	214	311	9	–	5	325
Metals and metallic goods,*	247	347	7	3	8	365
Models, lasts, and patterns,	41	63	1	–	–	64
Musical instruments and materials,	31	46	1	–	–	47
Oils and illuminating fluids,	8	10	–	–	–	10
Paints, colors, and crude chemicals,	18	32	–	–	1	33
Paper,*	17	38	–	–	2	40
Paper goods,	16	25	–	–	–	25
Perfumes, toilet articles, etc.,	4	4	–	–	–	4
Photographs and photographic materials,	16	22	1	–	–	23
Polishes and dressing,*	23	34	1	–	1	36
Printing, publishing, and bookbinding,	35	60	4	–	1	65
Print works, dye works, and bleacheries,	25	33	4	–	1	38
Railroad construction and equipment,	3	3	–	–	–	3
Rubber and elastic goods,	19	36	1	–	2	39
Saddlery and harness,	27	32	1	–	1	34
Scientific instruments and appliances,	15	20	1	–	–	21
Shipbuilding,	44	58	–	–	1	59
Silk and silk goods,	4	6	–	–	–	6
Sporting and athletic goods,	3	3	–	–	–	3
Stone,	177	239	8	–	5	252
Quarried,	31	44	3	–	1	48
Cut and monumental,	146	195	5	–	4	204
Straw and palm leaf goods,	15	30	–	–	–	30
Tallow, candles, soap, and grease,*	48	69	–	–	3	72
Tobacco, snuff, and cigars,	67	95	2	–	–	97
Toys and games (children's),	6	11	2	–	–	13
Trunks and valises,	7	13	–	–	–	13
Whips, lashes, and stocks,	6	9	1	–	–	10
Wooden goods,	61	80	3	–	2	85
Woollen goods,	75	105	6	–	2	113
Woven goods and yarn,	57	81	5	–	2	88
Shoddy, waste, etc.,	18	24	1	–	–	25
Worsted goods,	15	30	1	–	–	31
All Industries,	3,286	4,852	159	29	76	5,116

STOCKHOLDERS: BY INDUSTRIES.

1899.

[This presentation shows the number of stockholders in the 1,150 corporations engaged in the management of the 1,193 establishments. As in the preceding presentation, duplications occur in the industries indicated by an asterisk (*), since the same corporation is sometimes engaged in more than one industry, and the plan, as stated, has been to consider each establishment as a unit and to credit thereto the whole number of stockholders, but in making up the total for All Industries to omit duplications. Stockholders in certain establishments which are operated by railroad companies, or by industrial combinations, many of which have extensive investments of capital outside this Commonwealth, are not included in this presentation, since to include all the stockholders of a railroad company, or of an industrial combination, in connection with such merely branch establishments incidental only to the main business of the corporation, would result in abnormally increasing the aggregate.]

Industries.	Number of Corporations	Number of Stockholders			
		Males	Females	Banks, Trustees, etc.	Totals
Agricultural implements,	5	36	16	24	76
Arms and ammunition,	6	109	51	19	179
Artisans' tools,	19	467	299	101	867
Awnings, sails, tents, etc.,	-	-	-	-	-
Bicycles, tricycles, etc.,	3	31	1	-	32
Boots and shoes,*	86	814	182	41	1,037
Boots and shoes (factory product),*	70	597	72	23	692
Soles, heels, and cut stock,	13	204	108	18	330
Boot and shoe findings,	3	13	2	-	15
Stitching, heeling, etc.,	-	-	-	-	-
Boxes, barrels, kegs, etc.,	11	50	10	12	72
Boxes (paper),*	11	63	5	2	70
Brick, tiles, and sewer pipe,*	12	227	102	28	357
Brooms, brushes, and mops,	4	28	23	1	52
Building materials,	13	153	24	4	181
Burial cases, caskets, coffins, etc.,	2	29	10	8	47
Buttons and dress trimmings,	10	75	21	3	99
Carpetings,	9	436	384	176	996
Carriages and wagons,	11	46	19	4	69
Cement, kaolin, lime, and plaster,	3	11	1	-	12
Chemical preparations (compounded),	6	58	29	9	96
Clocks and watches,	2	240	246	69	555
Clothing,	31	388	150	34	572
Cooking, lighting, and heating apparatus,*	20	189	66	17	272
Cordage and twine,	9	320	254	18	592
Cotton goods,*	121	9,655	8,240	3,081	20,976
Cotton goods (woven),*	100	9,125	7,934	2,992	20,051
Cotton yarn and thread,*	18	513	302	88	903
Cotton waste,	3	17	4	1	22
Crayons, pencils, crucibles, etc.,	2	14	2	-	16
Drugs and medicines,	9	78	41	3	122
Dyestuffs,	2	38	12	5	55
Earthen, plaster, and stone ware,	1	9	-	-	9
Electrical apparatus and appliances,	15	259	58	21	338
Electroplating,	-	-	-	-	-
Emery and sand paper and cloth, etc.,	8	84	28	6	118
Fancy articles, etc.,	2	17	6	-	23
Fertilizers,	3	249	80	3	332
Fine arts and taxidermy,	1	7	1	-	8
Fire works and matches,	1	4	1	-	5

STOCKHOLDERS: BY INDUSTRIES. 1899 — Concluded.

Industries.	Number of Corporations	Number of Stockholders			
		Males	Females	Banks, Trustees, etc.	Totals
Flax, hemp, and jute goods,	6	68	53	12	133
Food preparations,	45	743	202	51	996
Furniture,	23	392	140	56	588
Glass,	2	27	9	5	41
Glue, isinglass, and starch,	7	168	40	15	223
Hair work (animal and human),	–	–	–	–	–
Hose: rubber, linen, etc.,	1	4	–	–	4
Hosiery and knit goods,	17	430	302	195	927
Ink, mucilage, and paste,	1	4	–	–	4
Ivory, bone, shell, and horn goods, etc.,	5	20	1	1	22
Jewelry,	13	57	7	–	64
Leather,	12	47	6	–	53
Leather goods,	7	107	50	6	163
Liquors (bottled) and carbonated beverages,	7	73	17	6	96
Liquors (malt),	26	1,602	179	28	1,809
Liquors (distilled),	–	–	–	–	–
Lumber,	4	77	40	2	119
Machines and machinery,	126	2,691	1,418	345	4,454
Metals and metallic goods,	114	1,202	562	174	1,938
Models, lasts, and patterns,*	4	19	6	1	26
Musical instruments and materials,	20	202	81	21	304
Oils and illuminating fluids,	2	10	3	2	15
Paints, colors, and crude chemicals,	9	61	22	10	93
Paper,	31	268	144	31	443
Paper goods,	16	345	164	23	532
Perfumes, toilet articles, etc.,	–	–	–	–	–
Photographs and photographic materials,	3	14	6	–	20
Polishes and dressing,	6	38	8	2	48
Printing, publishing, and bookbinding,	24	257	43	8	308
Print works, dye works, and bleacheries,*	20	602	507	435	1,544
Railroad construction and equipment,	†7	94	9	5	108
Rubber and elastic goods,*	22	334	113	39	486
Saddlery and harness,	2	14	7	–	21
Scientific instruments and appliances,	6	74	17	12	103
Shipbuilding,	4	64	18	9	91
Silk and silk goods,	7	113	45	10	168
Sporting and athletic goods,	3	12	–	1	13
Stone,	17	286	139	28	453
Quarried,	11	229	135	28	392
Cut and monumental,	6	57	4	–	61
Straw and palm leaf goods,	4	18	5	2	25
Tallow, candles, soap, and grease,	7	52	27	12	91
Tobacco, snuff, and cigars,	7	33	7	5	45
Toys and games (children's),	5	28	4	–	32
Trunks and valises,	–	–	–	–	–
Whips, lashes, and stocks,	5	145	67	11	223
Wooden goods,	12	169	51	21	241
Woollen goods,*	48	670	527	265	1,462
Woven goods and yarn,*	43	655	524	264	1,443
Shoddy, waste, etc.,*	5	15	3	1	19
Worsted goods,*	15	307	151	65	523
All Industries,	1,150	25,330	14,940	5,236	45,506

† Includes 3 railroad corporations.

STOCKHOLDERS: BY INDUSTRIES.

1900.

[This presentation shows the number of stockholders in the 1,199 corporations engaged in the management of the 1,260 establishments. As in the preceding presentation, duplications occur in the industries indicated by an asterisk (*), since the same corporation is sometimes engaged in more than one industry, and the plan, as stated, has been to consider each establishment as a unit and to credit thereto the whole number of stockholders, but in making up the total for All Industries to omit duplications. Stockholders in certain establishments which are operated by railroad companies, or by industrial combinations, many of which have extensive investments of capital outside this Commonwealth, are not included in this presentation, since to include all the stockholders of a railroad company, or of an industrial combination, in connection with such merely branch establishments incidental only to the main business of the corporation, would result in abnormally increasing the aggregate.]

Industries.	Number of Corporations	Number of Stockholders			
		Males	Females	Banks, Trustees, etc.	Totals
Agricultural implements,	5	38	17	21	76
Arms and ammunition,	6	113	51	20	184
Artisans' tools,	19	478	306	106	890
Awnings, sails, tents, etc.,	–	–	–	–	–
Bicycles, tricycles, etc.,	4	137	27	–	164
Boots and shoes,*	95	877	196	51	1,124
Boots and shoes (factory product),*	77	649	84	31	764
Soles, heels, and cut stock,	15	214	110	20	344
Boot and shoe findings,	3	14	2	–	16
Stitching, heeling, etc.,	–	–	–	–	–
Boxes, barrels, kegs, etc.,	11	44	15	12	71
Boxes (paper),*	10	55	3	2	60
Brick, tiles, and sewer pipe,*	13	205	75	17	297
Brooms, brushes and mops,	5	31	26	1	58
Building materials,	13	154	23	4	181
Burial cases, caskets, coffins, etc.,	2	31	10	7	48
Buttons and dress trimmings,	10	70	22	6	98
Carpetings,	8	451	401	173	1,025
Carriages and wagons,	14	102	47	4	153
Cement, kaolin, lime, and plaster,	3	12	2	–	14
Chemical preparations (compounded),	6	66	38	10	114
Clocks and watches,	2	266	285	76	627
Clothing,	34	440	186	31	657
Cooking, lighting, and heating apparatus,*	20	184	56	23	263
Cordage and twine,	9	365	202	38	605
Cotton goods,*	122	9,731	8,514	3,036	21,281
Cotton goods (woven),*	101	9,209	8,172	2,944	20,325
Cotton yarn and thread,*	18	506	336	91	933
Cotton waste,	3	16	6	1	23
Crayons, pencils, crucibles, etc.,	2	14	2	–	16
Drugs and medicines,	10	83	42	2	127
Dyestuffs,	2	40	12	5	57
Earthen, plaster, and stone ware,	1	9	–	–	9
Electrical apparatus and appliances,	15	395	101	39	535
Electroplating,	1	2	1	–	3
Emery and sand paper and cloth, etc.,	8	84	26	10	120
Fancy articles, etc.,	3	21	11	–	32
Fertilizers,	3	214	86	4	304
Fine arts and taxidermy,	1	7	1	–	8
Fireworks and matches,	1	4	1	–	5

STOCKHOLDERS: BY INDUSTRIES. **1900** — Concluded.

Industries.	Number of Corporations	Number of Stockholders			
		Males	Females	Banks, Trustees, etc.	Totals
Flax, hemp, and jute goods,	6	64	44	16	124
Food preparations,	47	761	203	58	1,022
Furniture,	24	385	157	57	599
Glass,	2	30	9	1	40
Glue, isinglass, and starch,	7	190	59	14	263
Hair work (animal and human),	–	–	–	–	–
Hose: rubber, linen, etc.,	1	3	1	–	4
Hosiery and knit goods,	18	468	330	181	979
Ink, mucilage, and paste,	1	4	–	–	4
Ivory, bone, shell and horn goods, etc.,	7	35	3	–	38
Jewelry,	15	63	7	1	71
Leather,	14	54	6	1	61
Leather goods,	8	135	61	6	202
Liquors (bottled) and carbonated beverages,	8	82	17	5	104
Liquors (malt),	18	1,561	221	20	1,802
Liquors (distilled),	1	–	–	1	1
Lumber,	5	59	38	2	99
Machines and machinery,	131	2,937	1,567	366	4,870
Metals and metallic goods,	121	1,270	583	164	2,017
Models, lasts, and patterns,*	5	22	7	1	30
Musical instruments and materials,	20	184	75	19	278
Oils and illuminating fluids,	2	8	3	1	12
Paints, colors, and crude chemicals,	10	87	28	3	118
Paper,	33	351	143	37	531
Paper goods,	16	336	165	22	523
Perfumes, toilet articles, etc.,	–	–	–	–	–
Photographs and photographic materials,	3	14	6	–	20
Polishes and dressing,	8	46	8	5	59
Printing, publishing, and bookbinding,	24	256	44	9	309
Print works, dye works, and bleacheries,*	21	598	475	421	1,494
Railroad construction and equipment,	†7	95	9	5	109
Rubber and elastic goods,*	22	330	117	35	482
Saddlery and harness,	3	19	8	–	27
Scientific instruments and appliances,	6	94	15	1	110
Shipbuilding,	4	59	21	8	88
Silk and silk goods,	7	126	31	4	161
Sporting and athletic goods,	4	16	–	1	17
Stone,	15	314	129	32	475
Quarried,	11	255	124	32	411
Cut and monumental,	4	59	5	–	64
Straw and palm leaf goods,	4	18	5	2	25
Tallow, candles, soap, and grease,	8	51	28	12	91
Tobacco, snuff, and cigars,	7	31	7	6	44
Toys and games (children's),	5	29	4	–	33
Trunks and valises,	–	–	–	–	–
Whips, lashes, and stocks,	5	145	69	12	226
Wooden goods,	12	176	53	8	237
Woollen goods,*	52	698	531	265	1,494
Woven goods and yarn,*	46	680	527	264	1,471
Shoddy, waste, etc.,*	6	18	4	1	23
Worsted goods,*	14	313	168	70	551
All Industries,	1,199	26,443	15,595	5,173	47,211

† Includes 3 railroad corporations.

Analysis.

By reference to the final lines of the first two presentations, pages 67 and 69, it will be seen that the total number of establishments considered is 4,645. Of this number 3,368 were conducted by private firms, 1,193 by corporations, and 84 by industrial combinations in 1899, and by 3,301 private firms, 1,260 corporations, and 84 industrial combinations in 1900, a loss in the latter year of 67 establishments, or 1.99 per cent, controlled by private firms, and a corresponding gain of 67 establishments, or 5.62 per cent passing into the corporate form of management. The number of establishments controlled by industrial combinations was the same in both years. The changes brought about by the transfer of the individual control of establishments to their management by corporate bodies during the two years may be seen in the following table:

Classification.	Number		Increase (+) or Decrease (−) in 1900	
	1899	1900	Number	Percentages
Private firms,	3,352	3,286	−66	−1.97
Corporations,	1,150	1,199	+49	+4.26
Industrial combinations,	22	22	*-	-
Totals,	4,524	4,507	−17	−0.38

* No change.

Although there was a decrease in the number of private firms of 66, or 1.97 per cent, there was an increase of only 49 in the number of corporations, a gain of 4.26 per cent, with no change in the number of industrial combinations. The total number of firms, corporations, and combinations shows a net decrease of 17, or 0.38 per cent, in 1900 as compared with 1899, indicating, of course, that 17 concerns were absorbed, in 1900, by firms, corporations, or combinations already in existence. This may be readily noted in the quarried stone industry wherein 36 private firms were in existence in 1899 as against 31 in 1900, five of the private firms having been absorbed by one of the existing corporations, since no corresponding increase in the number of corporations is found in 1900 as against the number in 1899. The average number of establishments managed by a corporation in 1899

was 1.03 and in 1900, 1.05. Each private firm managed, on an average, one establishment in both years, and each industrial combination controlled, on an average, 3.81 establishments in both years. The variations resulting from the changes from private firms to corporations, etc., and *vice versa* are brought out in the following table:

Industries.	1899			1900		
	Private Firms	Corporations	Industrial Combinations	Private Firms	Corporations	Industrial Combinations
Bicycles, tricycles, etc.,	6	3	1	5	4	1
Boots and shoes (factory product),	372	70	–	365	77	–
Boots and shoes (soles, heels, and cut stock),	178	13	–	176	15	–
Boxes (paper),	56	11	–	56	10	–
Brick, tiles, and sewer pipe,	51	12	–	50	13	–
Brooms, brushes, and mops,	19	4	–	18	5	–
Carpetings,	2	9	–	2	8	–
Carriages and wagons,	113	11	–	110	14	–
Clothing,	119	31	–	115	34	–
Cotton goods (woven),	11	100	–	10	101	–
Drugs and medicines,	12	9	–	11	10	–
Electroplating,	12	–	–	11	1	–
Fancy articles, etc.,	12	2	–	11	3	–
Food preparations,	287	45	2	285	47	2
Furniture,	105	23	–	104	24	–
Hosiery and knit goods,	17	17	–	16	18	–
Ivory, bone, shell, and horn goods, etc.,	18	5	–	16	7	–
Jewelry,	84	13	–	82	15	–
Leather,	76	12	1	74	14	1
Leather goods,	18	7	–	17	8	–
Liquors (bottled) and carbonated beverages,	22	7	–	21	8	–
Liquors (malt),	6	26	2	5	18	2
Liquors (distilled),	6	–	–	5	1	–
Lumber,	22	4	–	21	5	–
Machines and machinery,	219	126	3	214	131	3
Metals and metallic goods,	255	114	1	247	121	1
Models, lasts, and patterns,	42	4	–	41	5	–
Paints, colors, and crude chemicals,	19	9	1	18	10	1
Paper,	18	31	2	17	33	2
Polishes and dressing,	25	6	–	23	8	–
Print works, dye works, and bleacheries,	26	20	–	25	21	–
Saddlery and harness,	28	2	–	27	3	–
Sporting and athletic goods,	4	3	–	3	4	–
Stone (quarried),	36	11	–	31	11	–
Stone (cut and monumental),	144	6	–	146	4	–
Tallow, candles, soap, and grease,	49	7	–	48	8	–
Woollen goods (woven goods and yarn),	60	43	4	57	46	4
Woollen goods (shoddy, waste, etc.),	19	5	–	18	6	–
Worsted goods,	14	15	1	15	14	1

The preceding table shows the result of the changes which have been brought about in the actual number of existing private firms, corporations, and industrial combinations since 1899. In Bicycles, Tricycles, etc., a change appears from private firm in 1899 to corporation in 1900. In Clothing, while there is a loss of four private firms, there is a gain of only 3 corporations, indicating the absorption by the same corporation of two of the private firms. Other variations may be readily ascertained from the table.

The industries in which certain private firms controlled more than one establishment in 1900 are as follows:

Industries.	Establishments	Private Firms
Boxes, barrels, kegs, etc.,	102	101
Boxes (paper),	57	56
Metals and metallic goods,	250	247
Rubber and elastic goods,	20	19
Woollen goods (woven goods and yarn),	58	57

Industries in which some of the corporations controlled more than one establishment in 1900 are found in the following table:

Industries.	Establishments	Corporations
Boots and shoes (factory product),	80	77
Boxes, barrels, kegs, etc.,	12	11
Brick, tiles, and sewer pipe,	14	13
Carpetings,	10	8
Clothing,	35	34
Cotton goods (woven),	105	101
Food preparations,	48	47
Furniture,	25	24
Leather goods,	9	8
Liquors (malt),	30	18
Lumber,	6	5
Machines and machinery,	136	131
Metals and metallic goods,	123	121
Paper,	36	33
Stone (quarried),	16	11
Woollen goods (woven goods and yarn),	49	46

Industries in which industrial combinations controlled two or more establishments in 1900 are as follows:

Industries.	Establishments	Combinations
Artisans' tools,	2	1
Bicycles, tricycles, etc.,	3	1
Cotton goods (yarn and thread),	8	1
Food preparations,	8	2
Leather,	2	1
Liquors (malt),	4	2
Machines and machinery,	8	3
Paper,	22	2
Paper goods,	8	2
Rubber and elastic goods,	2	1
Woollen goods (woven goods and yarn),	9	4
Worsted goods,	5	1

The head-notes to the presentations on pages 74 and 76 call attention to the fact that the stockholders of certain establishments which are operated by railroad companies, or by industrial combinations, many of which have extensive investments of capital outside this Commonwealth, are not included in the presentations; since to include all the stockholders of a railroad company, or of an industrial combination, in connection with such merely branch establishments incidental only to the main business of the corporation, would have the result of abnormally increasing the aggregate. From the presentations relating to partners and stockholders, we bring forward in the following table the aggregates for All Industries for the years 1899 and 1900, and show the increase or decrease in the later as compared with the earlier year.

Partners and Stockholders.	Number		Increase (+) or Decrease (−) in 1900	
	1899	1900	Number	Percentages
Partners.	5,269	5,116	−153	−2.90
Males,	5,012	4,852	−160	−3.19
Females,	146	159	+13	+8.90
Special and estates,	111	105	−6	−5.41
Stockholders.	45,506	47,211	+1,705	+3.75
Males,	25,330	26,443	+1,113	+4.39
Females,	14,940	15,595	+655	+4.38
Banks, trustees, etc.,	5,236	5,173	−63	−1.20
Aggregates.	50,775	52,327	+1,552	+3.06
Males,	30,342	31,295	+953	+3.14
Females,	15,086	15,754	+668	+4.43
Special, banks, etc.,	5,347	5,278	−69	−1.29

Of the partners, the number of males declined from 5,012, in 1899, to 4,852 in 1900, a decrease of 160 persons, or 3.19 per cent. The number of female partners increased 13, or 8.90 per cent, while the number of special partners and estates decreased six, or 5.41 per cent.

The total number of stockholders shows an increase from 45,506 persons in 1899 to 47,211 in 1900, a gain of 1,705 persons, or 3.75 per cent. The number of males increased 4.39 per cent; females, 4.38 per cent; while banks, trustees, etc., decreased 1.20 per cent.

In the aggregate, comparing 1900 with 1899, there is seen an increase of 953 males, or 3.14 per cent; an increase of 668 females, or 4.43 per cent; and a decrease of 69 special, banks, etc., or 1.29 per cent. In 1899, females comprised 29.71 per cent of the aggregate of partners and stockholders, and in 1900, 30.11 per cent.

The number of partners and stockholders in the aggregate and in the average is shown by the following table:

Classification.	Number	
	1899	1900
Private firms,	3,352	3,286
Partners,	5,269	5,116
Average number of partners to a private firm,	1.57	1.56
Corporations,	1,150	1,199
Stockholders,	45,506	47,211
Average number of stockholders to a corporation,	39.57	39.38

While the number of private firms and the number of partners declined in 1900 as compared with 1899, there is no material variation in the average number of partners to a private firm, it being 1.57 in 1899, and 1.56 in 1900. The average number of stockholders to a corporation was 39.57 in 1899 and 39.38 in 1900, a slight variation in the latter year.

The returns relative to private firms, corporations, industrial combinations, partners, and stockholders for 1900 are condensed in the following summary: The returns represent 4,645 establishments found under 87 classified industries. These establishments are conducted by 3,286 private firms,

1,199 corporations, and 22 industrial combinations. In other words, 72.91 per cent of the establishments are in the hands of private firms, under the control of 5,116 persons, of whom 94.84 per cent are males, 3.11 per cent are females, and 2.05 per cent special partners and estates. Corporations control 26.60 per cent of the establishments, and in the corporations 47,211 persons are financially interested; of these 56.01 per cent are males, 33.03 per cent females, and 10.96 per cent are banks, trustees, etc. The average number of partners to a private firm is 1.56, and the average number of stockholders to a corporation is 39.38.

Investment, Materials Used, and Product.

On the following pages presentations appear which show, respectively, comparisons of the amount of capital invested, of the value of stock or materials used, and of the value of goods made and work done in 4,645 identical establishments each making returns for the years 1899 and 1900. The relative increase or decrease in 1900 as compared with 1899 is given in amounts and equivalent percentages.

As regards the meaning of the different subjects, we quote from the previous report: The term "capital invested" as used in these reports does not mean merely cash capital or capital stock. It includes all legitimate forms of capital devoted to production. Not only does it include cash, value of land, buildings, machinery, implements, and tools, but also the value of stock on hand in a raw state or in process of manufacture. Obviously, the last named element is variable from year to year. A small amount of stock on hand or in process of manufacture at the time the report is made would have its effect in showing diminished capitalization, and, on the other hand, an investment in materials purchased in a favorable market, the same being on hand at the time of making the return, would increase relatively the amount of capital invested, and yet neither condition would affect the standing of the industry.

The term "stock used" includes all materials used in the establishment, whether entering into the construction of the article, or consumed in the processes necessary to the production of the finished goods. Increase or decrease in value of stock used, considered by itself, does not always indicate gain or loss in the *quantity* consumed or a corresponding increase or decrease in the *quantity* of goods made, it often indicates simply a decline or rise in *values* and may have no appreciable effect on the quantity.

The term "goods made and work done" is sufficiently explicit. It includes the entire value of the output in the 4,645 establishments making return in the years 1899 and 1900.

CAPITAL INVESTED: BY INDUSTRIES.

1899, 1900.

[In this presentation, the figures given under "Amount of Capital Invested" represent the returns made by the same establishments, in each industry, for the years 1899 and 1900, the whole number of establishments considered in "All Industries" being 4,645. Comparison is made, as regards the amount of capital invested, between these two years. The relative increase or decrease in 1900 as compared with 1899 is given with its equivalent percentage.]

Industries.	Number of Establishments Considered	Amount of Capital Invested		Increase (+) or Decrease (−) in 1900	
		1899	1900	Amounts	Percentages
Agricultural implements,	9	$1,068,986	$1,010,121	−$58,865	−5.51
Arms and ammunition,	13	1,918,018	2,171,023	+253,005	+13.19
Artisans' tools,	78	3,179,323	3,369,402	+190,079	+5.98
Awnings, sails, tents, etc.,	36	133,195	141,599	+8,404	+6.31
Bicycles, tricycles, etc.,	12	1,811,462	2,271,643	+460,181	+25.40
Boots and shoes,	673	27,182,381	26,716,110	−466,271	−1.72
Boots and shoes (factory product),	445	23,889,515	23,594,242	−295,273	−1.24
Soles, heels, and cut stock,	191	2,796,708	2,613,546	−183,162	−6.55
Boot and shoe findings,	24	449,679	460,256	+10,577	+2.35
Stitching, heeling, etc.,	13	46,479	48,066	+1,587	+3.41
Boxes, barrels, kegs, etc.,	114	2,366,672	2,476,661	+109,989	+4.65
Boxes (paper),	67	1,022,779	1,134,483	+111,704	+10.92
Brick, tiles, and sewer pipe,	64	1,882,835	2,071,728	+188,893	+10.03
Brooms, brushes, and mops,	23	598,205	796,601	+198,396	+33.17
Building materials,	47	1,910,699	2,015,620	+104,921	+5.49
Burial cases, caskets, coffins, etc.,	6	143,960	159,488	+15,528	+10.79
Buttons and dress trimmings,	15	765,041	768,084	+3,043	+0.40
Carpetings,	12	6,612,557	6,546,465	−66,092	−1.00
Carriages and wagons,	124	2,161,213	2,289,099	+127,886	+5.92
Cement, kaolin, lime, and plaster,	9	150,653	149,980	−673	−0.45
Chemical preparations (compounded),	12	792,610	947,304	+154,694	+19.52
Clocks and watches,	10	4,605,448	4,889,216	+283,768	+6.16
Clothing,	150	4,912,681	5,274,680	+361,999	+7.37
Cooking, lighting, and heating apparatus,	43	1,902,445	1,877,202	−25,243	−1.33
Cordage and twine,	21	2,714,515	3,052,431	+337,916	+12.45
Cotton goods,	162	127,908,334	129,544,848	+1,636,514	+1.28
Cotton goods (woven),	115	101,438,832	102,332,258	+893,426	+0.88
Cotton yarn and thread,	39	25,735,120	26,548,416	+813,296	+3.16
Cotton waste,	8	734,382	664,174	−70,208	−9.56
Crayons, pencils, crucibles, etc.,	4	155,232	151,939	−3,293	−2.12
Drugs and medicines,	21	1,712,964	1,933,572	+220,608	+12.88
Dyestuffs,	6	608,374	547,566	−60,808	−1.00
Earthen, plaster, and stone ware,	10	226,307	242,367	+16,060	+7.10
Electrical apparatus and appliances,	19	4,436,297	4,644,378	+208,081	+4.69
Electroplating,	12	100,836	97,254	−3,582	−3.55
Emery and sand paper and cloth, etc.,	9	601,983	654,445	+52,462	+8.71
Fancy articles, etc.,	14	183,507	192,883	+9,376	+5.11
Fertilizers,	6	787,370	831,225	+43,855	+5.57
Fine arts and taxidermy,	3	31,345	32,100	+755	+2.41
Fireworks and matches,	3	49,190	53,181	+3,991	+8.11
Flax, hemp, and jute goods,	9	2,346,801	2,215,215	−131,586	−5.61
Food preparations,	341	20,058,072	19,319,987	−738,085	−3.68
Furniture,	129	7,304,850	7,547,016	+242,166	+3.32

CAPITAL INVESTED: BY INDUSTRIES — **1899, 1900** — Concluded.

Industries.	Number of Establishments Considered	Amount of Capital Invested		Increase (+) or Decrease (−) in 1900	
		1899	1900	Amounts	Percentages
Glass,	12	$146,966	$144,939	−$2,027	−1.38
Glue, isinglass, and starch,	19	1,050,352	1,027,781	−22,571	−2.15
Hair work (animal and human),	4	120,700	123,925	+3,225	+2.67
Hose: rubber, linen, etc.,	5	54,953	57,522	+2,569	+4.67
Hosiery and knit goods,	34	4,071,770	4,674,109	+602,339	+14.79
Ink, mucilage, and paste,	7	75,840	84,354	+8,514	+11.23
Ivory, bone, shell, and horn goods, etc.,	23	609,736	789,866	+180,130	+29.54
Jewelry,	97	3,420,901	3,362,518	−58,383	−1.71
Leather,	90	5,912,612	6,143,081	+230,469	+3.90
Leather goods,	26	1,474,688	1,701,153	+226,465	+15.36
Liquors (bottled) and carbonated beverages,	29	519,282	530,617	+11,335	+2.18
Liquors (malt),	39	13,545,014	15,050,905	+1,505,891	+11.12
Liquors (distilled),	6	427,737	452,535	+24,798	+5.80
Lumber,	27	1,169,048	1,083,495	−85,553	−7.32
Machines and machinery,	358	38,758,110	40,813,722	+2,055,612	+5.30
Metals and metallic goods,	374	17,583,868	17,676,413	+92,545	+0.53
Models, lasts, and patterns,	46	779,091	810,527	+31,436	+4.03
Musical instruments and materials,	51	3,706,381	3,914,911	+208,530	+5.63
Oils and illuminating fluids,	10	571,658	518,894	−52,764	−9.23
Paints, colors, and crude chemicals,	29	798,728	864,020	+65,292	+8.17
Paper,	75	20,499,173	20,218,471	−280,702	−1.37
Paper goods,	40	3,887,919	4,131,205	+243,286	+6.26
Perfumes, toilet articles, etc.,	4	15,149	27,481	+12,332	+81.40
Photographs and photographic materials,	19	239,263	346,590	+107,327	+44.86
Polishes and dressing,	31	452,894	543,142	+90,248	+19.93
Printing, publishing, and bookbinding,	59	6,202,019	6,459,122	+257,103	+4.15
Print works, dye works, and bleacheries,	46	12,719,977	13,787,026	+1,067,049	+8.39
Railroad construction and equipment,	15	2,085,946	2,005,758	−80,188	−3.84
Rubber and elastic goods,	44	11,817,027	11,804,952	−12,075	−0.10
Saddlery and harness,	30	307,263	284,410	−22,853	−7.44
Scientific instruments and appliances,	21	1,327,089	1,380,624	+53,535	+4.03
Shipbuilding,	48	1,350,521	3,265,659	+1,915,138	+141.81
Silk and silk goods,	11	2,371,381	2,278,757	−92,624	−3.91
Sporting and athletic goods,	7	218,803	218,718	−85	−0.04
Stone,	197	3,320,405	3,868,525	+548,120	+16.51
Quarried,	47	1,550,842	2,055,198	+504,356	+32.52
Cut and monumental,	150	1,769,563	1,813,327	+43,764	+2.47
Straw and palm leaf goods,	19	1,982,179	2,048,546	+66,367	+3.35
Tallow, candles, soap, and grease,	56	2,046,057	2,046,375	+318	+0.02
Tobacco, snuff, and cigars,	74	1,042,279	1,050,270	+7,991	+0.77
Toys and games (children's),	11	401,520	467,153	+65,633	+16.35
Trunks and valises,	7	52,945	49,751	−3,194	−6.03
Whips, lashes, and stocks,	11	481,967	480,284	−1,683	−0.35
Wooden goods,	74	1,510,153	1,457,631	−52,522	−3.48
Woollen goods,	140	27,252,551	24,673,165	−2,579,386	−9.46
Woven goods and yarn,	116	26,311,518	23,665,498	−2,646,020	−10.06
Shoddy, waste, etc.,	24	941,033	1,007,667	+66,634	+7.08
Worsted goods,	34	17,980,205	15,829,430	−2,150,775	−11.96
All Industries,	4,645	$448,709,260	$456,685,248	+$7,975,988	+1.78

STOCK USED: BY INDUSTRIES.

1899, 1900.

[In this presentation, the figures given under "Value of Stock Used" represent the returns made by the same establishments in each industry, for the years 1899 and 1900, the whole number of establishments considered in "All Industries" being 4,645. Comparison is made, as regards value of stock used, between these two years. The relative increase or decrease in 1900 as compared with 1899 is given with its equivalent percentage.]

Industries.	Number of Establishments Considered	Value of Stock Used		Increase (+) or Decrease (−) in 1900	
		1899	1900	Amounts	Percentages
Agricultural implements,	9	$508,881	$616,577	+$107,696	+21.16
Arms and ammunition,	13	919,866	873,816	−46,050	−5.01
Artisans' tools,	78	952,969	1,146,350	+193,381	+20.29
Awnings, sails, tents, etc.,	36	305,561	318,589	+13,028	+4.26
Bicycles, tricycles, etc.,	12	1,114,269	944,005	−170,264	−15.28
Boots and shoes,	673	80,829,679	80,966,554	+136,875	+0.17
Boots and shoes (factory product),	445	67,882,859	69,288,694	+1,405,835	+2.07
Soles, heels, and cut stock,	191	11,981,510	10,708,363	−1,273,147	−10.63
Boot and shoe findings,	24	935,433	941,204	+5,771	+0.62
Stitching, heeling, etc.,	13	29,877	28,293	−1,584	−5.30
Boxes, barrels, kegs, etc.,	114	2,369,603	2,719,568	+349,965	+14.77
Boxes (paper),	67	1,098,269	1,140,471	+42,202	+3.84
Brick, tiles, and sewer pipe,	64	368,857	375,039	+6,182	+1.68
Brooms, brushes, and mops,	23	917,912	1,019,525	+101,613	+11.07
Building materials,	47	1,214,387	1,293,141	+78,754	+6.49
Burial cases, caskets, coffins, etc.,	6	124,800	145,212	+20,412	+16.36
Buttons and dress trimmings,	15	423,970	431,353	+7,383	+1.74
Carpetings,	12	4,187,029	4,744,696	+557,667	+13.32
Carriages and wagons,	124	1,615,902	1,722,864	+106,962	+6.62
Cement, kaolin, lime, and plaster,	9	80,531	85,586	+5,055	+6.28
Chemical preparations (compounded),	12	700,670	931,383	+230,713	+32.93
Clocks and watches,	10	618,913	653,185	+34,272	+5.54
Clothing,	150	10,184,198	12,026,671	+1,842,473	+18.09
Cooking, lighting, and heating apparatus,	43	1,185,754	1,198,166	+12,412	+1.05
Cordage and twine,	21	4,509,419	5,914,449	+1,405,030	+31.16
Cotton goods,	162	50,956,971	66,162,140	+15,205,169	+29.84
Cotton goods (woven),	115	42,694,368	52,262,483	+9,568,115	+22.41
Cotton yarn and thread,	39	6,753,755	12,147,147	+5,393,392	+79.86
Cotton waste,	8	1,508,848	1,752,510	+243,662	+16.15
Crayons, pencils, crucibles, etc.,	4	70,747	73,330	+2,583	+3.65
Drugs and medicines,	21	1,625,874	1,661,581	+35,707	+2.20
Dyestuffs,	6	340,008	286,860	−53,148	−15.63
Earthen, plaster, and stone ware,	10	71,753	65,195	−6,558	−9.14
Electrical apparatus and appliances,	19	4,383,338	5,499,053	+1,115,715	+25.45
Electroplating,	12	88,520	79,781	−8,739	−9.87
Emery and sand paper and cloth, etc.,	9	329,302	323,700	−5,602	−1.70
Fancy articles, etc.,	14	257,552	283,225	+25,673	+9.97
Fertilizers,	6	1,123,071	1,087,656	−35,415	−3.15
Fine arts and taxidermy,	3	5,604	7,066	+1,462	+26.09
Fireworks and matches,	3	45,673	46,075	+402	+0.88
Flax, hemp, and jute goods,	9	2,026,757	2,493,182	+466,425	+23.01
Food preparations,	341	63,289,915	65,427,877	+2,137,962	+3.38
Furniture,	129	6,376,545	6,465,820	+89,275	+1.40

STOCK USED: BY INDUSTRIES—1899, 1900—Concluded.

Industries.	Number of Establishments Considered	Value of Stock Used		Increase (+) or Decrease (−) in 1900	
		1899	1900	Amounts	Percentages
Glass,	12	$104,508	$106,104	+$1,596	+1.53
Glue, isinglass, and starch,	19	795,270	827,902	+32,632	+4.10
Hair work (animal and human),	4	254,400	216,025	−38,375	−15.08
Hose: rubber, linen, etc.,	5	72,489	96,040	+23,551	+32.49
Hosiery and knit goods,	34	2,358,186	2,905,186	+547,000	+23.20
Ink, mucilage, and paste,	7	248,029	231,575	−16,454	−6.63
Ivory, bone, shell, and horn goods, etc.,	23	916,370	987,369	+70,999	+7.75
Jewelry,	97	3,991,581	4,092,610	+101,029	+2.53
Leather,	90	15,040,299	13,905,787	−1,134,512	−7.54
Leather goods,	26	1,878,666	1,950,234	+71,568	+3.81
Liquors (bottled) and carbonated beverages,	29	694,376	707,126	+12,750	+1.84
Liquors (malt),	39	2,467,930	2,458,534	−9,396	−0.38
Liquors (distilled),	6	1,439,460	1,694,299	+254,839	+17.70
Lumber,	27	1,487,010	1,610,754	+123,744	+8.32
Machines and machinery,	358	14,924,194	18,673,352	+3,749,158	+25.12
Metals and metallic goods,	374	14,945,612	15,297,738	+352,126	+2.36
Models, lasts, and patterns,	46	364,331	352,794	−11,537	−3.17
Musical instruments and materials,	51	2,041,839	2,353,259	+311,420	+15.25
Oils and illuminating fluids,	10	1,203,413	1,125,273	−78,140	−6.49
Paints, colors, and crude chemicals,	29	1,122,340	1,025,821	−96,519	−8.60
Paper,	75	11,302,055	12,486,281	+1,184,226	+10.48
Paper goods,	40	4,086,590	4,447,467	+360,877	+8.83
Perfumes, toilet articles, etc.,	4	142,937	147,548	+4,611	+3.23
Photographs and photographic materials,	19	285,742	323,927	+38,185	+13.36
Polishes and dressing,	31	880,134	1,222,896	+342,762	+38.94
Printing, publishing, and bookbinding,	59	2,272,516	2,338,032	+65,516	+2.88
Print works, dye works, and bleacheries,	46	17,351,909	19,649,150	+2,297,241	+13.24
Railroad construction and equipment,	15	2,194,433	2,252,742	+58,309	+2.66
Rubber and elastic goods,	44	14,556,071	13,661,362	−894,709	−6.15
Saddlery and harness,	30	712,882	740,060	+27,178	+3.81
Scientific instruments and appliances,	21	976,583	1,105,472	+128,889	+13.20
Shipbuilding,	48	1,060,450	1,378,681	+318,231	+30.01
Silk and silk goods,	11	3,801,504	3,502,306	−299,198	−7.87
Sporting and athletic goods,	7	174,148	215,299	+41,151	+23.63
Stone,	197	1,270,360	1,212,397	−57,963	−4.56
Quarried,	47	116,967	119,360	+2,393	+2.05
Cut and monumental,	150	1,153,393	1,093,037	−60,356	−5.23
Straw and palm leaf goods,	19	2,667,187	2,719,298	+52,111	+1.95
Tallow, candles, soap, and grease,	56	2,291,616	2,534,753	+243,137	+10.61
Tobacco, snuff, and cigars,	74	1,669,996	1,936,187	+266,191	+15.94
Toys and games (children's),	11	321,452	327,898	+6,446	+2.01
Trunks and valises,	7	74,797	72,757	−2,040	−2.73
Whips, lashes, and stocks,	11	566,776	585,471	+18,695	+3.30
Wooden goods,	74	1,093,003	1,241,052	+148,049	+13.55
Woollen goods,	140	18,424,789	21,898,179	+3,473,390	+18.85
Woven goods and yarn,	116	17,496,629	20,877,512	+3,380,883	+19.32
Shoddy, waste, etc.,	24	928,160	1,020,667	+92,507	+9.97
Worsted goods,	34	19,549,806	19,377,717	−172,089	−0.88
All Industries,	4,645	$419,301,108	$455,224,455	+$35,923,347	+8.57

GOODS MADE: BY INDUSTRIES.

1899, 1900.

[In this presentation, the figures given under "Value of Goods Made and Work Done" represent the returns made by the same establishments in each industry, for the years 1899 and 1900, the whole number of establishments considered in "All Industries" being 4,645. Comparison is made, as regards the value of goods made and work done, between these two years. The relative increase or decrease in 1900 as compared with 1899 is given with its equivalent percentage.]

Industries.	Number of Establishments Considered	Value of Goods Made and Work Done		Increase (+) or Decrease (−) in 1900	
		1899	1900	Amounts	Percentages
Agricultural implements,	9	$1,219,811	$1,308,292	+$88,481	+7.25
Arms and ammunition,	13	2,775,079	3,031,631	+256,552	+9.24
Artisans' tools,	78	3,456,597	3,941,240	+484,643	+14.02
Awnings, sails, tents, etc.,	36	557,584	562,186	+4,602	+0.83
Bicycles, tricycles, etc.,	12	2,353,546	1,753,991	−599,555	−25.47
Boots and shoes,	673	127,427,884	129,189,130	+1,761,246	+1.38
Boots and shoes (factory product),	445	109,894,372	113,098,534	+3,204,162	+2.92
Soles, heels, and cut stock,	191	15,778,213	14,312,811	−1,465,402	−9.29
Boot and shoe findings,	24	1,511,019	1,557,431	+46,412	+3.07
Stitching, heeling, etc.,	13	244,280	220,354	−23,926	−9.79
Boxes, barrels, kegs, etc.,	114	4,479,697	5,018,475	+538,778	+12.03
Boxes (paper),	67	2,567,341	2,594,400	+27,059	+1.05
Brick, tiles, and sewer pipe,	64	1,275,535	1,403,207	+127,672	+10.01
Brooms, brushes, and mops,	23	1,578,041	1,766,849	+188,808	+11.96
Building materials,	47	2,319,197	2,471,128	+151,931	+6.55
Burial cases, caskets, coffins, etc.,	6	314,307	342,315	+28,008	+8.91
Buttons and dress trimmings,	15	1,118,159	1,078,027	−40,132	−3.59
Carpetings,	12	7,136,878	7,762,492	+625,614	+8.77
Carriages and wagons,	124	3,789,608	3,972,509	+182,901	+4.83
Cement, kaolin, lime, and plaster,	9	194,584	195,596	+1,012	+0.52
Chemical preparations (compounded),	12	1,362,004	1,723,182	+361,178	+26.52
Clocks and watches,	10	2,969,474	4,403,003	+1,433,529	+48.28
Clothing,	150	19,510,099	21,360,719	+1,850,620	+9.49
Cooking, lighting, and heating apparatus,	43	3,508,200	3,566,428	+58,228	+1.66
Cordage and twine,	21	6,621,475	7,958,717	+1,337,242	+20.20
Cotton goods,	162	99,008,249	125,494,899	+26,486,650	+26.75
Cotton goods (woven),	115	85,881,724	102,065,653	+16,183,929	+18.84
Cotton yarn and thread,	39	11,323,415	21,340,155	+10,016,740	+88.46
Cotton waste,	8	1,803,110	2,089,091	+285,981	+15.86
Crayons, pencils, crucibles, etc.,	4	177,928	186,630	+8,702	+4.89
Drugs and medicines,	21	4,685,919	4,892,153	+206,234	+4.40
Dyestuffs,	6	576,994	428,603	−148,391	−25.72
Earthen, plaster, and stone ware,	10	254,738	238,799	−15,939	−6.26
Electrical apparatus and appliances,	19	8,662,724	10,820,826	+2,158,102	+24.91
Electroplating,	12	203,296	213,078	+9,782	+4.81
Emery and sand paper and cloth, etc.,	9	991,702	983,133	−8,569	−0.86
Fancy articles, etc.,	14	557,068	599,549	+42,481	+7.63
Fertilizers,	6	2,131,531	1,720,547	−410,984	−19.28
Fine arts and taxidermy,	3	39,955	47,634	+7,679	+19.22
Fireworks and matches,	3	123,881	132,765	+8,884	+7.17
Flax, hemp, and jute goods,	9	4,005,143	4,712,883	+707,740	+17.67
Food preparations,	341	77,737,922	79,497,795	+1,759,873	+2.26
Furniture,	129	12,370,201	12,559,853	+189,652	+1.53

GOODS MADE: BY INDUSTRIES—1899, 1900—Concluded.

Industries.	Number of Establishments Considered	Value of Goods Made and Work Done		Increase (+) or Decrease (−) in 1900	
		1899	1900	Amounts	Percentages
Glass,	12	$337,211	$313,349	−$23,862	−7.08
Glue, isinglass, and starch,	19	1,167,050	1,186,229	+19,179	+1.64
Hair work (animal and human),	4	322,600	272,350	−50,250	−15.58
Hose: rubber, linen, etc.,	5	139,094	172,586	+33,492	+24.08
Hosiery and knit goods,	34	5,315,595	6,456,806	+1,141,211	+21.47
Ink, mucilage, and paste,	7	505,043	515,183	+10,140	+2.01
Ivory, bone, shell, and horn goods, etc.,	23	1,903,431	2,055,106	+151,675	+7.97
Jewelry,	97	9,337,455	9,480,630	+143,175	+1.53
Leather,	90	19,848,590	18,381,491	−1,467,099	−7.39
Leather goods,	26	3,105,517	3,220,675	+115,158	+3.71
Liquors (bottled) and carbonated beverages,	29	1,182,101	1,186,996	+4,895	+0.41
Liquors (malt),	39	10,616,760	11,346,260	+729,500	+6.87
Liquors (distilled),	6	2,693,093	2,760,682	+67,589	+2.51
Lumber,	27	2,586,155	2,622,364	+36,209	+1.40
Machines and machinery,	358	39,972,702	50,833,138	+10,860,436	+27.17
Metals and metallic goods,	374	28,349,404	29,746,722	+1,397,318	+4.93
Models, lasts, and patterns,	46	1,235,775	1,196,607	−39,168	−3.17
Musical instruments and materials,	51	5,835,103	6,425,417	+590,314	+10.12
Oils and illuminating fluids,	10	1,525,639	1,401,584	−124,055	−8.13
Paints, colors, and crude chemicals,	29	1,761,863	1,791,605	+29,742	+1.69
Paper,	75	20,550,518	21,491,529	+941,011	+4.58
Paper goods,	40	6,794,919	7,576,644	+781,725	+11.50
Perfumes, toilet articles, etc.,	4	171,411	174,969	+3,558	+2.08
Photographs and photographic materials,	19	672,841	666,444	−6,397	−0.95
Polishes and dressing,	31	1,660,616	2,090,838	+430,222	+25.91
Printing, publishing, and bookbinding,	59	8,760,504	9,122,679	+362,175	+4.13
Print works, dye works, and bleacheries,	46	24,617,571	26,404,878	+1,787,307	+7.26
Railroad construction and equipment,	15	3,991,045	4,135,630	+144,585	+3.62
Rubber and elastic goods,	44	23,838,400	22,863,098	−975,302	−4.09
Saddlery and harness,	30	1,139,250	1,176,579	+37,329	+3.28
Scientific instruments and appliances,	21	2,125,172	2,471,708	+346,536	+16.31
Shipbuilding,	48	2,199,346	2,828,545	+629,199	+28.61
Silk and silk goods,	11	5,798,364	5,295,364	−503,000	−8.67
Sporting and athletic goods,	7	437,949	534,172	+96,223	+21.97
Stone,	197	4,887,793	4,954,777	+66,984	+1.37
Quarried,	47	1,526,972	1,592,589	+65,617	+4.30
Cut and monumental,	150	3,360,821	3,362,188	+1,367	+0.04
Straw and palm leaf goods,	19	4,823,503	4,821,541	−1,962	−0.04
Tallow, candles, soap, and grease,	56	3,572,633	3,986,628	+413,995	+11.59
Tobacco, snuff, and cigars,	74	3,995,775	4,357,906	+362,131	+9.06
Toys and games (children's),	11	747,212	820,170	+72,958	+9.76
Trunks and valises,	7	171,985	170,459	−1,526	−0.89
Whips, lashes, and stocks,	11	1,306,500	1,351,801	+45,301	+3.47
Wooden goods,	74	2,334,256	2,584,062	+249,806	+10.70
Woollen goods,	140	32,074,688	38,001,317	+5,926,629	+18.48
Woven goods and yarn,	116	30,486,668	36,262,524	+5,775,856	+18.95
Shoddy, waste, etc.,	24	1,588,020	1,738,793	+150,773	+9.49
Worsted goods,	34	34,220,442	32,173,495	−2,046,947	−5.98
All Industries,	4,645	$736,695,225	$799,353,677	+$62,658,452	+8.51

Analysis.

As shown in the table on pages 85 and 86, the amount of capital invested in the 4,645 establishments was $448,709,260 in 1899, and $456,685,248 in 1900; an increase in 1900 of $7,975,988, or 1.78 per cent. The highest percentage of increase (141.81) is found in Shipbuilding, this abnormal gain being due to the recent expansion of this industry, detail regarding which may be found in the article on Battle Ship Construction, page 55, *ante*. The lowest percentage of increase in capital (0.02) is found in Tallow, Candles, Soap, and Grease. Increase is also shown for each of the industries except the following:

Agricultural Implements.
Boots and Shoes (Factory Product).
Boots and Shoes (Soles, Heels, and Cut Stock).
Carpetings.
Cement, Kaolin, Lime, and Plaster.
Cooking, Lighting, and Heating Apparatus.
Cotton Goods (Waste).
Crayons, Pencils, Crucibles, etc.
Dyestuffs.
Electroplating.
Flax, Hemp, and Jute Goods.
Food Preparations.
Glass.
Glue, Isinglass, and Starch.
Jewelry.
Lumber.
Oils and Illuminating Fluids.
Paper.
Railroad Construction and Equipment.
Rubber and Elastic Goods.
Saddlery and Harness.
Silk and Silk Goods.
Sporting and Athletic Goods.
Trunks and Valises.
Whips, Lashes, and Stocks.
Wooden Goods.
Woollen Goods (Woven Goods and Yarn).
Worsted Goods.

From the final line of the presentation on pages 87 and 88 it is seen that the aggregate value of stock or materials used in the 4,645 establishments in 1899 was, $419,301,108 and in 1900, $455,224,455, an increase in the latter year of $35,923,347, or 8.57 per cent. The largest percentage of increase (79.86) is found in Cotton Yarn and Thread, and the smallest (0.62) in Boot and Shoe Findings. The industries which show a decrease in 1900 as against 1899 in the value of stock and materials used are as follows:

Arms and Ammunition.
Bicycles, Tricycles, etc.
Boots and Shoes (Soles, Heels, and Cut Stock).
Boots and Shoes (Stitching, Heeling, etc.).
Dyestuffs.
Earthen, Plaster, and Stone Ware.

Electroplating.
Emery and Sand Paper and Cloth, etc.
Fertilizers.
Hair Work (Animal and Human).
Ink, Mucilage, and Paste.
Leather.
Liquors (Malt).
Models, Lasts, and Patterns.
Oils and Illuminating Fluids.
Paints, Colors, and Crude Chemicals.
Rubber and Elastic Goods.
Silk and Silk Goods.
Stone (Cut and Monumental).
Trunks and Valises.
Worsted Goods.

On pages 89 and 90 is presented a comparison of the value of goods made and work done in the 4,645 establishments making return in each of the years 1899 and 1900. The aggregate value of product for 1899 is $736,695,225 and for 1900, $799,353,677, an increase in the latter year of $62,658,452, or 8.51 per cent. The highest percentage of increase (88.46) is found in Cotton Yarn and Thread, and the lowest (0.04) in Stone (Cut and Monumental). The following 32 industries show percentages of increase in excess of that shown for All Industries (8.51):

Industries.	Percentages	Industries.	Percentages
Carpetings,	8.77	Flax, hemp, and jute goods,	17.67
Burial cases, caskets, coffins, etc.,	8.91	Cotton goods (woven),	18.84
Tobacco, snuff, and cigars,	9.06	Woollen goods (woven goods and yarn),	18.95
Arms and ammunition,	9.24	Fine arts and taxidermy,	19.22
Clothing,	9.49	Cordage and twine,	20.20
Woollen goods (shoddy, waste, etc.),	9.49	Hosiery and knit goods,	21.47
Toys and games (children's),	9.76	Sporting and athletic goods,	21.97
Brick, tiles, and sewer pipe,	10.01	Hose: rubber, linen, etc.,	24.08
Musical instruments and materials,	10.12	Electrical apparatus and appliances,	24.91
Wooden goods,	10.70	Polishes and dressing,	25.91
Paper goods,	11.50	Chemical preparations (compounded),	26.52
Tallow, candles, soap, and grease,	11.59	Machines and machinery,	27.17
Brooms, brushes, and mops,	11.96	Shipbuilding,	28.61
Boxes, barrels, kegs, etc.,	12.03	Clocks and watches,	48.28
Artisans' tools,	14.02	Cotton yarn and thread,	88.46
Cotton goods (waste),	15.86		
Scientific instruments and appliances,	16.31		

The following 36 industries exhibit percentages of increase less than that shown for All Industries (8.51):

Industries.	Percentages	Industries.	Percentages
Ivory, bone, shell, and horn goods, etc.,	7.97	Whips, lashes, and stocks,	3.47
Fancy articles, etc.,	7.63	Saddlery and harness,	3.28
Print works, dye works, and bleacheries,	7.26	Boots and shoes (findings),	3.07
Agricultural implements,	7.25	Boots and shoes (factory product),	2.92
Fireworks and matches,	7.17	Liquors (distilled),	2.51
Liquors (malt),	6.87	Food preparations,	2.26
Building materials,	6.55	Perfumes, toilet articles, etc.,	2.08
Metals and metallic goods,	4.93	Ink, mucilage, and paste,	2.01
Crayons, pencils, crucibles, etc.,	4.89	Paints, colors, and crude chemicals,	1.69
Carriages and wagons,	4.83	Cooking, lighting, and heating apparatus,	1.66
Electroplating,	4.81	Glue, isinglass, and starch,	1.64
Paper,	4.58	Furniture,	1.53
Drugs and medicines,	4.40	Jewelry,	1.53
Stone (quarried),	4.30	Lumber,	1.40
Printing, publishing, and bookbinding,	4.13	Boxes (paper),	1.05
Leather goods,	3.71	Awnings, sails, tents, etc.,	0.83
Railroad construction and equipment,	3.62	Cement, kaolin, lime, and plaster,	0.52
		Liquors (bottled) and carbonated beverages,	0.41
		Stone (cut and monumental),	0.04

The industries showing a decrease in the value of goods made and work done in 1900 as compared with 1899, 19 in number, are as follows:

Industries.	Percentages	Industries.	Percentages
Straw and palm leaf goods,	0.04	Leather,	7.39
Emery and sand paper and cloth, etc.,	0.86	Oils and illuminating fluids,	8.13
Trunks and valises,	0.89	Silk and silk goods,	8.67
Photographs and photographic materials,	0.95	Boots and shoes (soles, heels, and cut stock),	9.29
Models, lasts, and patterns,	3.17	Boots and shoes (stitching, heeling, etc.),	9.79
Buttons and dress trimmings,	3.59	Hair work (animal and human),	15.58
Rubber and elastic goods,	4.09	Fertilizers,	19.28
Worsted goods,	5.98	Bicycles, tricycles, etc.,	25.47
Earthen, plaster, and stone ware,	6.26	Dyestuffs,	25.72
Glass,	7.08		

In the following table, we reproduce from the preceding presentations, pages 85 to 90, the percentages of increase or decrease in investment, materials used, and product for the nine

leading industries of the Commonwealth in detail and in the aggregate, for the other industries in the aggregate, and for All Industries:

Industries.	Percentages of Increase (+) or Decrease (−) in 1899 as Compared with 1900 in—		
	Amount of Capital Invested.	Value of Stock Used	Value of Goods Made and Work Done
Boots and shoes,	−1.72	+0.17	+1.38
Carpetings,	−1.00	+13.32	+8.77
Cotton goods,	+1.28	+29.84	+26.75
Leather,	+3.90	−7.54	−7.39
Machines and machinery,	+5.30	+25.12	+27.17
Metals and metallic goods,	+0.53	+2.36	+4.93
Paper,	−1.37	+10.48	+4.58
Woollen goods,	−9.46	+18.85	+18.48
Worsted goods,	−11.96	−0.88	−5.98
Nine industries,	−0.53	+10.15	+10.89
Other industries,	+5.98	+6.65	+5.54
All industries,	+1.78	+8.57	+8.51

In the nine leading industries considered in the aggregate, we find that the increase in the value of stock and materials used of 10.15 per cent is accompanied by a corresponding percentage of increase in the selling value of the manufactured product, namely, 10.89. Considering the nine industries in detail, however, we find that Leather shows a decrease of 7.54 per cent in value of stock used and a decrease of 7.39 per cent in value of goods produced in 1900 as against 1899, while Worsted Goods shows a decrease of 0.88 per cent in value of stock used and a still further decrease of 5.98 per cent in value of product. In Paper, the value of stock increased over 10 per cent and the value of goods made increased about five per cent. Cotton Goods, Machines and Machinery, and Woollen Goods show a practical uniformity in the percentages of increase in stock and product, and this is also true of the industries other than the nine and for All Industries in the aggregate.

Labor and its Compensation.

The statistical presentations under this subject head cover the number of persons employed for 1899 and 1900 in the 4,645 establishments under consideration, together with the amount of wages paid and the classified weekly wages. The data are arranged as follows:

1. The average number of persons employed, separated as to sex.

2. The average number of persons employed and the number employed at the periods of employment of smallest and greatest number, respectively, without regard to sex.

3. The range of employment and unemployment in 1899 and 1900; that is to say, the difference between the greatest and smallest number of persons employed, with the increase or decrease in "range" in 1900 as compared with 1899 expressed in numbers and percentages.

4. The aggregate number of persons employed (both sexes) month by month and the percentages of employment and unemployment for the nine leading industries and for All Industries, for 1899 and 1900.

5. The total amount paid in wages during each of the years 1899 and 1900 and the average yearly earnings for both years, based upon the average number of persons employed without regard to sex or age and the total amount paid in wages.

6. Classified weekly wages for the nine leading industries and for All Industries for adult males and females, and for young persons irrespective of sex, for each of the years 1899 and 1900.

Attention is called to the head-notes to the several presentations which explain the meaning of the figures shown.

AVERAGE NUMBER OF PERSONS EMPLOYED: BY SEX AND INDUSTRIES.

1899, 1900.

[In this presentation, the average number of males, females, and both sexes for each industry is shown. The total number of establishments is 4,645, and the number of establishments in each industry is as given in all preceding presentations. It should be borne in mind that the persons here enumerated are wage earners only; officers, clerks, or other salaried persons are not included.]

Industries.	1899			1900		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Agricultural implements,	650	–	650	668	–	668
Arms and ammunition,	1,920	256	2,176	2,131	157	2,288
Artisans' tools,	2,303	60	2,363	2,578	64	2,642
Awnings, sails, tents, etc.,	158	67	225	163	59	222
Bicycles, tricycles, etc.,	1,364	29	1,393	1,142	24	1,166
Boots and shoes,	40,289	18,571	58,860	40,390	18,898	59,288
Boots and shoes (factory product),	36,794	16,538	53,332	36,960	16,773	53,733
Soles, heels, and cut stock,	3,005	1,486	4,491	2,947	1,520	4,467
Boot and shoe findings,	326	314	640	356	354	710
Stitching, heeling, etc.,	164	233	397	127	251	378
Boxes, barrels, kegs, etc.,	2,342	378	2,720	2,491	395	2,886
Boxes (paper),	662	1,776	2,438	714	1,725	2,439
Brick, tiles, and sewer pipe,	1,235	12	1,247	1,305	7	1,312
Brooms, brushes, and mops,	478	449	927	528	485	1,013
Building materials,	1,130	3	1,133	1,147	3	1,150
Burial cases, caskets, coffins, etc.,	151	21	172	158	21	179
Buttons and dress trimmings,	383	655	1,038	434	536	970
Carpetings,	2,234	2,276	4,510	2,241	2,368	4,609
Carriages and wagons,	1,911	13	1,924	1,910	10	1,920
Cement, kaolin, lime, and plaster,	137	–	137	126	–	126
Chemical preparations (compounded),	473	4	477	486	3	489
Clocks and watches,	1,213	1,520	2,733	1,363	1,674	3,037
Clothing,	2,794	7,042	9,836	3,105	7,422	10,527
Cooking, lighting, and heating apparatus,	2,031	8	2,039	2,089	10	2,099
Cordage and twine,	1,401	827	2,228	1,414	859	2,273
Cotton goods,	46,778	43,406	90,184	48,481	44,144	92,625
Cotton goods (woven),	41,147	37,823	78,970	42,191	38,523	80,714
Cotton yarn and thread,	5,347	5,437	10,784	5,992	5,468	11,460
Cotton waste,	284	146	430	298	153	451
Crayons, pencils, crucibles, etc.,	44	43	87	45	46	91
Drugs and medicines,	427	457	884	422	418	840
Dyestuffs,	98	28	126	92	29	121
Earthen, plaster, and stone ware,	169	37	206	157	31	188
Electrical apparatus and appliances,	3,784	720	4,504	4,455	800	5,255
Electroplating,	110	13	123	124	18	142
Emery and sand paper and cloth, etc.,	427	–	427	446	1	447
Fancy articles, etc.,	149	211	360	160	212	372
Fertilizers,	228	–	228	221	4	225
Fine arts and taxidermy,	19	–	19	23	–	23
Fireworks and matches,	60	14	74	63	22	85

AVERAGE NUMBER OF PERSONS EMPLOYED: BY SEX AND INDUSTRIES — 1899, 1900 — Concluded.

INDUSTRIES.	1899			1900		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Flax, hemp, and jute goods,	1,211	1,363	2,574	1,358	1,493	2,851
Food preparations,	7,086	2,914	10,000	6,945	3,056	10,001
Furniture,	5,092	589	5,681	5,044	585	5,629
Glass,	264	15	279	238	14	252
Glue, isinglass, and starch,	326	40	366	303	41	344
Hair work (animal and human),	51	61	112	50	56	106
Hose: rubber, linen, etc.,	18	14	32	25	15	40
Hosiery and knit goods,	1,681	4,339	6,020	2,003	4,774	6,777
Ink, mucilage, and paste,	43	42	85	40	42	82
Ivory, bone, shell, and horn goods, etc.,	941	169	1,110	988	192	1,180
Jewelry,	3,250	1,906	5,156	3,320	1,858	5,178
Leather,	4,943	37	4,980	4,774	53	4,827
Leather goods,	744	149	893	845	152	997
Liquors (bottled) and carbonated beverages,	243	6	249	263	8	271
Liquors (malt),	1,588	–	1,588	1,498	–	1,498
Liquors (distilled),	32	–	32	35	–	35
Lumber,	781	6	787	799	6	805
Machines and machinery,	24,134	350	24,484	29,231	392	29,623
Metals and metallic goods,	13,125	1,514	14,639	13,579	1,576	15,155
Models, lasts, and patterns,	590	2	592	582	4	586
Musical instruments and materials,	2,805	219	3,024	2,954	220	3,174
Oils and illuminating fluids,	125	13	138	117	12	129
Paints, colors, and crude chemicals,	246	27	273	253	26	279
Paper,	5,351	3,576	8,927	5,481	3,425	8,906
Paper goods,	1,493	1,812	3,305	1,589	1,966	3,555
Perfumes, toilet articles, etc.,	12	12	24	13	18	31
Photographs and photographic materials,	115	92	207	120	100	220
Polishes and dressing,	112	174	286	132	190	322
Printing, publishing, and bookbinding,	2,697	1,612	4,309	2,879	1,563	4,442
Print works, dye works, and bleacheries,	5,279	1,149	6,428	5,246	1,205	6,451
Railroad construction and equipment,	2,752	–	2,752	2,763	2	2,765
Rubber and elastic goods,	5,046	4,177	9,223	4,938	3,670	8,608
Saddlery and harness,	350	101	451	359	175	534
Scientific instruments and appliances,	1,246	323	1,569	1,367	380	1,747
Shipbuilding,	1,133	–	1,133	1,479	–	1,479
Silk and silk goods,	979	1,841	2,820	963	1,762	2,725
Sporting and athletic goods,	194	71	265	220	112	332
Stone,	4,192	–	4,192	4,177	–	4,177
Quarried,	2,013	–	2,013	2,055	–	2,055
Cut and monumental,	2,179	–	2,179	2,122	–	2,122
Straw and palm leaf goods,	1,002	1,691	2,693	992	1,772	2,764
Tallow, candles, soap, and grease,	622	93	715	626	95	721
Tobacco, snuff, and cigars,	1,501	605	2,106	1,618	669	2,287
Toys and games (children's),	477	96	573	505	116	621
Trunks and valises,	80	12	92	81	11	92
Whips, lashes, and stocks,	416	165	581	413	159	572
Wooden goods,	1,430	78	1,508	1,512	96	1,608
Woollen goods,	11,712	6,731	18,443	12,700	7,212	19,912
Woven goods and yarn,	11,117	6,672	17,789	12,109	7,144	19,253
Shoddy, waste, etc.,	595	59	654	591	68	659
Worsted goods,	7,937	7,037	14,974	7,708	6,826	14,534
ALL INDUSTRIES,	242,999	124,119	367,118	254,397	126,544	380,941

SMALLEST, GREATEST, AND AVERAGE NUMBER OF PERSONS EMPLOYED: BY INDUSTRIES.

1899, 1900.

[This presentation shows the average number of persons employed, and the number of persons employed at periods of employment of smallest and greatest number, respectively. It should be borne in mind that the number of persons here enumerated are wage earners only; officers, clerks, or other salaried persons are not included.]

Industries.	1899			1900		
	Average Number	Smallest Number	Greatest Number	Average Number	Smallest Number	Greatest Number
Agricultural implements,	650	541	733	668	556	712
Arms and ammunition,	2,176	1,374	2,803	2,288	1,826	2,820
Artisans' tools,	2,363	1,946	2,627	2,642	2,332	2,894
Awnings, sails, tents, etc.,	225	146	329	222	138	322
Bicycles, tricycles, etc.,	1,393	915	1,948	1,166	609	1,685
Boots and shoes,	58,860	46,231	69,477	59,288	46,707	70,969
Boots and shoes (factory product),	53,332	41,826	62,920	53,733	42,380	64,161
Soles, heels, and cut stock,	4,491	3,655	5,300	4,467	3,496	5,425
Boot and shoe findings,	640	506	771	710	551	871
Stitching, heeling, etc.,	397	244	486	378	280	512
Boxes, barrels, kegs, etc.,	2,720	2,293	3,154	2,886	2,536	3,306
Boxes (paper),	2,438	2,110	2,782	2,439	2,130	2,797
Brick, tiles, and sewer pipe,	1,247	600	2,360	1,312	668	2,432
Brooms, brushes, and mops,	927	816	1,051	1,013	907	1,134
Building materials,	1,133	907	1,336	1,150	966	1,354
Burial cases, caskets, coffins, etc.,	172	167	176	179	164	188
Buttons and dress trimmings,	1,038	757	1,237	970	802	1,134
Carpetings,	4,510	4,278	4,838	4,609	3,782	4,952
Carriages and wagons,	1,924	1,515	2,346	1,920	1,478	2,381
Cement, kaolin, lime, and plaster,	137	119	165	126	109	148
Chemical preparations (compounded),	477	422	540	489	438	533
Clocks and watches,	2,733	2,516	2,927	3,037	2,835	3,221
Clothing,	9,836	8,183	11,504	10,527	8,359	12,224
Cooking, lighting, and heating apparatus,	2,039	1,631	2,364	2,099	1,604	2,369
Cordage and twine,	2,228	1,869	2,466	2,273	1,876	2,531
Cotton goods,	90,184	85,661	94,205	92,625	86,204	97,113
Cotton goods (woven),	78,970	75,276	81,772	80,714	75,102	84,253
Cotton yarn and thread,	10,784	9,989	11,976	11,460	10,689	12,380
Cotton waste,	430	396	457	451	413	480
Crayons, pencils, crucibles, etc.,	87	60	107	91	65	115
Drugs and medicines,	884	557	1,275	840	507	1,177
Dyestuffs,	126	87	150	121	94	143
Earthen, plaster, and stone ware,	206	191	233	188	190	251
Electrical apparatus and appliances,	4,504	3,535	5,416	5,255	4,729	5,753
Electroplating,	123	103	138	142	114	174
Emery and sand paper and cloth, etc.,	427	386	464	447	414	484
Fancy articles, etc.,	360	162	651	372	175	610
Fertilizers,	228	202	292	225	136	384
Fine arts and taxidermy,	19	18	21	23	20	27
Fireworks and matches,	74	39	102	85	70	113

SMALLEST, GREATEST, AND AVERAGE NUMBER OF PERSONS EMPLOYED: BY INDUSTRIES — 1899, 1900 — Concluded.

INDUSTRIES.	1899			1900		
	Average Number	Smallest Number	Greatest Number	Average Number	Smallest Number	Greatest Number
Flax, hemp, and jute goods,	2,574	2,429	2,748	2,851	2,524	3,091
Food preparations,	10,000	8,140	12,327	10,001	8,309	12,076
Furniture,	5,681	4,699	6,710	5,629	4,649	6,576
Glass,	279	163	334	252	121	308
Glue, isinglass, and starch,	366	298	571	344	283	586
Hair work (animal and human),	112	106	117	106	53	127
Hose: rubber, linen, etc.,	32	20	35	40	35	44
Hosiery and knit goods,	6,020	5,382	6,708	6,777	6,044	7 419
Ink, mucilage, and paste,	85	75	105	82	69	99
Ivory, bone, shell, and horn goods, etc.,	1,110	978	1,372	1,180	1,002	1,388
Jewelry,	5,156	4,015	6,295	5,178	4,097	6,369
Leather,	4,980	4,131	5,986	4,827	3,747	5,964
Leather goods,	893	732	1,134	997	878	1,167
Liquors (bottled) and carbonated beverages,	249	179	354	271	198	378
Liquors (malt),	1,588	1,470	1,708	1,498	1,372	1,611
Liquors (distilled),	32	32	35	35	32	37
Lumber,	787	514	958	805	641	946
Machines and machinery,	24,484	19,831	29,187	29,623	25,465	33,424
Metals and metallic goods,	14,639	12,138	17,079	15,155	12,632	17,444
Models, lasts, and patterns,	592	495	693	586	499	689
Musical instruments and materials,	3,024	2,685	3,362	3,174	2,826	3,441
Oils and illuminating fluids,	138	119	161	129	116	158
Paints, colors, and crude chemicals,	273	246	296	279	250	306
Paper,	8,927	8,051	9,853	8,906	7,624	9,861
Paper goods,	3,305	2,866	3,784	3,555	3,200	3,871
Perfumes, toilet articles, etc.,	24	21	29	31	27	36
Photographs and photographic materials,	207	172	234	220	186	256
Polishes and dressing,	286	193	383	322	220	399
Printing, publishing, and bookbinding,	4,309	3,852	4,894	4,442	3,986	4,822
Print works, dye works, and bleacheries,	6,428	5,756	6,942	6,451	5,281	7,283
Railroad construction and equipment,	2,752	2,453	3,139	2,765	2,540	3,033
Rubber and elastic goods,	9,223	8,233	10,092	8,608	6,807	9,836
Saddlery and harness,	451	366	507	534	446	622
Scientific instruments and appliances,	1,569	1,284	1,760	1,747	1,621	1,867
Shipbuilding,	1,133	689	1,658	1,479	966	2,126
Silk and silk goods,	2,820	2,534	3,048	2,725	2,329	3,056
Sporting and athletic goods,	265	154	368	332	220	428
Stone,	4,192	2,593	5,669	4,177	2,446	5,894
Quarried,	2,013	1,039	2,891	2,055	1,228	3,008
Cut and monumental,	2,179	1,554	2,778	2,122	1,218	2,886
Straw and palm leaf goods,	2,693	628	4,888	2,764	595	4,757
Tallow, candles, soap, and grease,	715	647	783	721	630	797
Tobacco, snuff, and cigars,	2,106	1,735	2,489	2,287	1,968	2,534
Toys and games (children's),	573	356	791	621	412	829
Trunks and valises,	92	57	118	92	64	114
Whips, lashes, and stocks,	581	550	612	572	497	634
Wooden goods,	1,508	1,261	1,755	1,608	1,378	1,850
Woollen goods,	18,443	15,022	21,547	19,912	16,494	22,438
Woven goods and yarn,	17,789	14,552	20,719	19,253	16,044	21,561
Shoddy, waste, etc.,	654	470	828	659	450	877
Worsted goods,	14,974	13,367	16,866	14,534	8,438	17,361
ALL INDUSTRIES,	367,118	312,054	420,701	380,941	317,757	434,802

RANGE OF EMPLOYMENT AND UNEMPLOYMENT: BY INDUSTRIES.

1899, 1900.

[In this presentation, the excess of greatest over smallest number of persons, as obtained from the tables on pages 98 and 99, is shown and a comparison is made between the two years. The relative increase or decrease in the excess of greatest over smallest number employed in 1900 as compared with 1899 is given with its equivalent percentage. It should be borne in mind that the persons here enumerated are wage earners only; officers, clerks, or other salaried persons are not included.]

Industries.	Number of Establishments Considered	Excess of Greatest Over Smallest Number of Persons Employed		Increase (+) or Decrease (−) in 1900	
		1899	1900	Number	Percentages
Agricultural implements,	9	192	156	−36	−18.75
Arms and ammunition,	13	1,429	994	−435	−30.44
Artisans' tools,	78	681	562	−119	−17.47
Awnings, sails, tents, etc.,	36	183	184	+1	+0.55
Bicycles, tricycles, etc.,	12	1,033	1,076	+43	+4.16
Boots and shoes,	673	23,246	24,262	+1,016	+4.37
Boots and shoes (factory product),	445	21,094	21,781	+687	+3.26
Soles, heels, and cut stock,	191	1,645	1,929	+284	+17.26
Boot and shoe findings,	24	265	320	+55	+20.75
Stitching, heeling, etc.,	13	242	232	−10	−4.13
Boxes, barrels, kegs, etc.,	114	861	770	−91	−10.57
Boxes (paper),	67	672	667	−5	−0.74
Brick, tiles, and sewer pipe,	64	1,760	1,764	+4	+0.23
Brooms, brushes, and mops,	23	235	227	−8	−3.40
Building materials,	47	429	388	−41	−9.56
Burial cases, caskets, coffins, etc.,	6	9	24	+15	+166.67
Buttons and dress trimmings,	15	480	332	−148	−30.83
Carpetings,	12	560	1,170	+610	+108.93
Carriages and wagons,	124	831	903	+72	+8.66
Cement, kaolin, lime, and plaster,	9	46	39	−7	−15.22
Chemical preparations (compounded),	12	118	95	−23	−19.49
Clocks and watches,	10	411	386	−25	−6.08
Clothing,	150	3,321	3,865	+544	+16.38
Cooking, lighting, and heating apparatus,	43	733	765	+32	+4.37
Cordage and twine,	21	597	655	+58	+9.72
Cotton goods,	162	8,544	10,909	+2,365	+27.68
Cotton goods (woven),	115	6,496	9,151	+2,655	+40.87
Cotton yarn and thread,	39	1,987	1,691	−296	−14.90
Cotton waste,	8	61	67	+6	+9.84
Crayons, pencils, crucibles, etc.,	4	47	50	+3	+6.38
Drugs and medicines,	21	718	670	−48	−6.69
Dyestuffs,	6	63	49	−14	−22.22
Earthen, plaster, and stone ware,	10	42	61	+19	+45.24
Electrical apparatus and appliances,	19	1,881	1,024	−857	−45.56
Electroplating,	12	35	60	+25	+71.43
Emery and sand paper and cloth, etc.,	9	78	70	−8	−10.26
Fancy articles, etc.,	14	489	435	−54	−11.04
Fertilizers,	6	90	248	+158	+175.56
Fine arts and taxidermy,	3	3	7	+4	+133.33
Fireworks and matches,	3	63	43	−20	−31.75

RANGE OF EMPLOYMENT AND UNEMPLOYMENT: BY INDUSTRIES — 1899, 1900 — Concluded.

Industries.	Number of Establishments Considered	Excess of Greatest Over Smallest Number of Persons Employed		Increase (+) or Decrease (—) in 1900	
		1899	1900	Number	Percentages
Flax, hemp, and jute goods,	9	319	567	+248	+77.74
Food preparations,	341	4,187	3,767	—420	—10.03
Furniture,	129	2,011	1,927	—84	—4.18
Glass,	12	171	187	+16	+9.36
Glue, isinglass, and starch,	19	273	303	+30	+10.99
Hair work (animal and human),	4	11	74	+63	+572.73
Hose: rubber, linen, etc.,	5	15	9	—6	—40.00
Hosiery and knit goods,	34	1,326	1,375	+49	+3.70
Ink, mucilage, and paste,	7	30	30	*-	-
Ivory, bone, shell, and horn goods, etc.,	23	394	386	—8	—2.03
Jewelry,	97	2,280	2,272	—8	—0.35
Leather,	90	1,855	2,217	+362	+19.51
Leather goods,	26	402	289	—113	—28.11
Liquors (bottled) and carbonated beverages,	29	175	180	+5	+2.86
Liquors (malt),	39	238	239	+1	+0.42
Liquors (distilled),	6	3	5	+2	+66.67
Lumber,	27	444	305	—139	—31.31
Machines and machinery,	358	9,356	7,959	—1,397	—14.93
Metals and metallic goods,	374	4,941	4,812	—129	—2.61
Models, lasts, and patterns,	46	198	190	—8	—4.04
Musical instruments and materials,	51	677	615	—62	—9.16
Oils and illuminating fluids,	10	42	42	*-	-
Paints, colors, and crude chemicals,	29	50	56	+6	+12.00
Paper,	75	1,802	2,237	+435	+24.14
Paper goods,	40	918	671	—247	—26.91
Perfumes, toilet articles, etc.,	4	8	9	+1	+12.50
Photographs and photographic materials,	19	62	70	+8	+12.90
Polishes and dressing,	31	190	179	—11	—5.79
Printing, publishing, and bookbinding,	59	1,042	836	—206	—19.77
Print works, dye works, and bleacheries,	46	1,186	2,002	+816	+68.80
Railroad construction and equipment,	15	686	493	—193	—28.13
Rubber and elastic goods,	44	1,859	3,029	+1,170	+62.94
Saddlery and harness,	30	141	176	+35	+24.82
Scientific instruments and appliances,	21	476	246	—230	—48.32
Shipbuilding,	48	969	1,160	+191	+19.71
Silk and silk goods,	11	514	727	+213	+41.44
Sporting and athletic goods,	7	214	208	—6	—2.80
Stone,	197	3,076	3,448	+372	+12.09
Quarried,	47	1,852	1,780	—72	—3.89
Cut and monumental,	150	1,224	1,668	+444	+36.27
Straw and palm leaf goods,	19	4,260	4,162	—98	—2.30
Tallow, candles, soap, and grease,	56	136	167	+31	+22.79
Tobacco, snuff, and cigars,	74	754	566	—188	—24.93
Toys and games (children's),	11	435	417	—18	—4.14
Trunks and valises,	7	61	50	—11	—18.03
Whips, lashes, and stocks,	11	62	137	+75	+120.97
Wooden goods,	74	494	472	—22	—4.45
Woollen goods,	140	6,525	5,944	—581	—8.90
Woven goods and yarn,	116	6,167	5,517	—650	—10.54
Shoddy, waste, etc.,	24	358	427	+69	+19.27
Worsted goods,	34	3,499	8,923	+5,424	+155.02
All Industries,	4,645	108,647	117,045	+8,398	+7.73

* No change.

PERSONS EMPLOYED—BOTH SEXES. AGGREGATES, BY MONTHS.

1899, 1900.

[This presentation shows, for the nine leading industries and for All Industries, the aggregate number of persons employed during each month of the years 1899 and 1900, together with percentages of employment and unemployment based on the month when the greatest number of persons was employed; this greatest number has been considered as 100 per cent and the variations from this percentage month by month indicate the fluctuations in employment. It should be borne in mind that the persons here enumerated are wage earners only; officers, clerks, or other salaried persons are not included. Considerations of space have led to the curtailment of the presentation to the nine leading industries, but the figures in detail for any of the 87 classified industries may be obtained upon application to this department.]

Industries and Months.	1899			1900		
	Number of Persons Employed in Establishments Considered	Percentages of—		Number of Persons Employed in Establishments Considered	Percentages of—	
		Employment	Unemployment		Employment	Unemployment
Boots and Shoes (Aggregates).*						
January,	54,912	90.25	9.75	61,398	98.54	1.46
February,	57,438	94.40	5.60	62,141	99.74	0.26
March,	59,384	97.60	2.40	62,305	100.00	–
April,	59,509	97.80	2.20	59,501	95.50	4.50
May,	59,174	97.25	2.75	57,828	92.81	7.19
June,	58,461	96.08	3.92	55,743	89.47	10.53
July,	58,316	95.84	4.16	54,813	87.98	12.02
August,	60,666	99.71	0.29	58,510	93.91	6.09
September,	60,845	100.00	–	59,437	95.40	4.60
October,	59,213	97.32	2.68	59,252	95.10	4.90
November,	59,380	97.59	2.41	59,734	95.87	4.13
December,	58,479	96.11	3.89	60,254	96.71	3.29
Boots and Shoes (Factory Product).						
January,	49,855	90.34	9.66	55,415	98.42	1.58
February,	52,201	94.59	5.41	56,054	99.55	0.45
March,	53,933	97.73	2.27	56,305	100.00	–
April,	53,987	97.83	2.17	53,821	95.59	4.41
May,	53,715	97.33	2.67	52,482	93.21	6.79
June,	53,110	96.24	3.76	50,505	89.70	10.30
July,	52,947	95.94	4.06	49,840	88.52	11.48
August,	55,053	99.76	0.24	53,326	94.71	5.29
September,	55,186	100.00	–	54,127	96.13	3.87
October,	53,550	97.04	2.96	53,915	95.76	4.24
November,	53,575	97.08	2.92	54,104	96.09	3.91
December,	52,469	95.08	4.92	54,493	96.78	3.22
Boots and Shoes (Soles, Heels, and Cut Stock).						
January,	4,070	83.49	16.51	4,819	99.61	0.39
February,	4,189	85.93	14.07	4,838	100.00	–
March,	4,382	89.89	10.11	4,767	98.53	1.47
April,	4,493	92.16	7.84	4,564	94.34	5.66
May,	4,463	91.55	8.45	4,272	88.30	11.70
June,	4,399	90.24	9.76	4,281	87.45	12.55
July,	4,411	90.48	9.52	4,045	83.61	16.39
August,	4,579	93.93	6.07	4,208	86.98	13.02
September,	4,597	94.30	5.70	4,273	88.32	11.68
October,	4,601	94.38	5.62	4,285	88.57	11.43
November,	4,709	96.59	3.41	4 516	93.34	6.66
December,	4,875	100.00	–	4,624	95.58	4.42

* These figures include the persons employed in Boots and Shoes (Factory Product); Boots and Shoes (Soles, Heels, and Cut Stock); Boots and Shoes (Findings); and Boots and Shoes (Stitching, Heeling, etc.).

PERSONS EMPLOYED—BOTH SEXES. AGGREGATES, BY MONTHS —1899, 1900— Continued.

Industries and Months.	1899			1900		
	Number of Persons Employed in Establishments Considered	Percentages of —		Number of Persons Employed in Establishments Considered	Percentages of —	
		Employment	Unemployment		Employment	Unemployment
Boots and Shoes (Findings).						
January,	586	85.05	14.95	701	90.57	9.43
February,	633	91.87	8.13	774	100.00	–
March,	656	95.21	4.79	765	98.84	1.16
April,	630	91.44	8.56	714	92.25	7.75
May,	618	89.70	10.30	714	92.25	7.75
June,	606	87.95	12.05	683	88.24	11.76
July,	605	87.81	12.19	617	79.72	20.28
August,	647	93.90	6.10	672	86.82	13.18
September,	662	96.08	3.92	704	90.96	9.04
October,	664	96.37	3.63	704	90.96	9.04
November,	675	97.97	2.03	742	95.87	4.13
December,	689	100.00	–	762	98.45	1.55
Boots and Shoes (Stitching, Heeling, etc.).						
January,	401	89.91	10.09	463	97.47	2.53
February,	415	93.05	6.95	475	100.00	–
March,	413	92.60	7.40	468	98.53	1.47
April,	399	89.46	10.54	402	84.63	15.37
May,	378	84.75	15.25	360	75.79	24.21
June,	346	77.58	22.42	324	68.21	31.79
July,	353	79.15	20.85	311	65.47	34.53
August,	387	86.77	13.23	304	64.00	36.00
September,	400	89.69	10.31	333	70.11	29.89
October,	398	89.24	10.76	348	73.26	26.74
November,	421	94.39	5.61	372	78.32	21.68
December,	446	100.00	–	375	78.95	21.05
Carpetings.						
January,	4,027	84.62	15.38	4,833	100.00	–
February,	4,535	95.29	4.71	4,806	99.44	0.56
March,	4,535	95.29	4.71	4,576	94.68	5.32
April,	4,450	93.51	6.49	4,057	83.94	16.06
May,	4,437	93.23	6.77	4,671	96.65	3.35
June,	4,544	95.48	4.52	4,788	99.07	0.93
July,	4,593	96.51	3.49	4,737	98.01	1.99
August,	4,628	97.25	2.75	4,801	99.34	0.66
September,	4,723	99.24	0.76	4,744	98.16	1.84
October,	4,187	87.98	12.02	3,992	82.60	17.40
November,	4,759	100.00	–	4,516	93.44	6.56
December,	4,692	98.59	1.41	4,774	98.78	1.22
Cotton Goods (Aggregates).*						
January,	88,995	96.25	3.75	92,481	98.27	1.73
February,	89,195	96.47	3.53	92,978	98.80	1.20
March,	89,794	97.12	2.88	94,110	100.00	–
April,	90,677	98.07	1.93	93,191	99.02	0.98
May,	90,184	97.54	2.46	93,133	98.96	1.04
June,	90,134	97.48	2.52	93,555	99.41	0.59
July,	89,990	97.33	2.67	92,203	97.97	2.03
August,	89,304	96.59	3.41	90,252	95.90	4.10
September,	90,232	97.59	2.41	90,522	96.19	3.81
October,	89,905	97.24	2.76	92,135	97.90	2.10
November,	91,237	98.68	1.32	93,139	98.97	1.03
December,	92,461	100.00	–	93,688	99.55	0.45
Cotton Goods (Woven).						
January,	78,442	97.84	2.16	80,834	99.13	0.87
February,	78,484	97.89	2.11	81,254	99.64	0.36
March,	79,027	98.57	1.43	81,544	100.00	–
April,	79,194	98.78	1.22	81,465	99.90	0.10
May,	79,334	98.95	1.05	81,409	99.83	0.17
June,	79,236	98.83	1.17	81,202	99.58	0.42
July,	78,442	97.84	2.16	80,744	99.02	0.98
August,	78,325	97.69	2.31	78,772	96.60	3.40
September,	78,564	97.99	2.01	78,260	95.97	4.03
October,	78,595	98.03	1.97	80,504	98.72	1.28
November,	79,754	99.48	0.52	81,306	99.71	0.29
December,	80,174	100.00	–	81,173	99.55	0.45

* These figures include the persons employed in Cotton Goods (Woven); Cotton Goods (Yarn and Thread); and Cotton Goods (Waste).

PERSONS EMPLOYED — BOTH SEXES. AGGREGATES, BY MONTHS — **1899, 1900** — Continued.

Industries and Months.	1899			1900		
	Number of Persons Employed in Establishments Considered	Percentages of —		Number of Persons Employed in Establishments Considered	Percentages of —	
		Employment	Unemployment		Employment	Unemployment
Cotton Goods (Yarn and Thread).						
January,	10,138	85.47	14.53	11,197	92.49	7.51
February,	10,302	86.85	13.15	11,263	93.04	6.96
March,	10,344	87.20	12.80	12,106	100.00	–
April,	11,061	93.25	6.75	11,270	93.09	6.91
May,	10,426	87.89	12.11	11,267	93.07	6.93
June,	10,465	88.22	11.78	11,907	98.36	1.64
July,	11,098	93.56	6.44	11,017	91.00	9.00
August,	10,530	88.77	11.23	11,046	91.24	8.76
September,	11,228	96.66	3.34	11,824	97.67	2.33
October,	10,872	91.65	8.35	11,185	92.39	7.61
November,	11,043	93.10	6.90	11,382	94.02	5.98
December,	11,862	100.00	–	12,047	99.51	0.49
Cotton Goods (Waste).						
January,	415	92.22	7.78	450	96.15	3.85
February,	409	90.89	9.11	461	98.50	1.50
March,	423	94.00	6.00	460	98.29	1.71
April,	422	93.78	6.22	456	97.44	2.56
May,	424	94.22	5.78	457	97.65	2.35
June,	433	96.22	3.78	446	95.30	4.70
July,	450	100.00	–	442	94.44	5.56
August,	449	99.78	0.22	434	92.74	7.26
September,	440	97.78	2.22	438	93.59	6.41
October,	438	97.33	2.67	446	95.30	4.70
November,	440	97.78	2.22	451	96.37	3.63
December,	425	94.44	5.56	468	100.00	–
Leather.						
January,	4,506	82.77	17.23	5,286	100.00	–
February,	4,601	84.52	15.48	5,209	98.54	1.46
March,	4,762	87.47	12.53	5,218	98.71	1.29
April,	4,930	90.56	9.44	4,908	92.85	7.15
May,	4,854	89.16	10.84	4,876	92.24	7.76
June,	4,899	89.99	10.01	4,547	86.02	13.98
July,	4,902	90.04	9.96	4,471	84.58	15.42
August,	4,890	89.82	10.18	4,531	85.72	14.28
September,	5,160	94.78	5.22	4,680	88.54	11.46
October,	5,315	97.63	2.37	4,624	87.48	12.52
November,	5,444	100.00	–	4,676	88.46	11.54
December,	5,442	99.96	0.04	4,832	91.41	8.59
Machines and Machinery.						
January,	21,906	81.52	18.48	28,900	96.73	3.27
February,	22,168	82.49	17.51	29,516	98.79	1.21
March,	23,259	86.55	13.45	29,687	99.36	0.64
April,	23,084	85.90	14.10	29,283	98.01	1.99
May,	23,572	87.72	12.28	29,597	99.06	0.94
June,	24,213	90.10	9.90	29,825	99.83	0.17
July,	24,274	90.33	9.67	29,639	99.20	0.80
August,	25,110	93.44	6.56	29,639	99.20	0.80
September,	25,935	96.51	3.49	29,721	99.48	0.52
October,	26,492	98.58	1.42	29,821	99.81	0.19
November,	26,741	99.51	0.49	29,877	100.00	–
December,	26,873	100.00	–	29,709	99.44	0.56
Metals and Metallic Goods.						
January,	13,272	85.87	14.13	15,457	99.03	0.97
February,	13,726	88.81	11.19	15,609	100.00	–
March,	14,229	92.06	7.94	15,474	99.14	0.86
April,	14,334	92.74	7.26	15,447	98.96	1.04
May,	14,420	93.30	6.70	15,294	97.98	2.02
June,	14,641	94.73	5.27	15,099	96.73	3.27
July,	14,324	92.68	7.32	14,507	92.94	7.06
August,	14,548	94.13	5.87	14,444	92.54	7.46
September,	14,908	96.45	3.55	14,765	94.59	5.41
October,	15,259	98.73	1.27	15,151	97.07	2.93
November,	15,357	99.36	0.64	15,250	97.70	2.30
December,	15,456	100.00	–	15,123	96.89	3.11

PERSONS EMPLOYED — BOTH SEXES. AGGREGATES, BY MONTHS — **1899, 1900** — Continued.

Industries and Months.	1899			1900		
	Number of Persons Employed in Establishments Considered	Percentages of —		Number of Persons Employed in Establishments Considered	Percentages of —	
		Employment	Unemployment		Employment	Unemployment
Paper.						
January,	8,999	97.87	2.13	8,647	93.48	6.52
February,	9,109	99.06	0.94	9,250	100.00	–
March,	9,131	99.30	0.70	9,204	99.50	0.50
April,	9,195	100.00	–	9,135	98.76	1.24
May,	9,160	99.62	0.38	9,073	98.09	1.91
June,	9,167	99.70	0.30	8,931	96.55	3.45
July,	9,113	99.11	0.89	8,500	91.89	8.11
August,	8,401	91.36	8.64	8,374	90.53	9.47
September,	8,511	92.56	7.44	8,696	94.01	5.99
October,	8,631	93.87	6.13	8,936	96.61	3.39
November,	8,810	95.81	4.19	8,975	97.03	2.97
December,	8,873	96.50	3.50	9,064	97.99	2.01
Woollen Goods (Aggregates).*						
January,	17,476	89.02	10.98	20,708	99.34	0.66
February,	17,711	90.22	9.78	20,735	99.47	0.53
March,	18,141	92.41	7.59	20,846	100.00	–
April,	18,478	94.13	5.87	20,516	98.42	1.58
May,	18,512	94.30	5.70	20,506	98.37	1.63
June,	18,054	91.97	8.03	20,383	97.78	2.22
July,	17,994	91.66	8.34	19,553	93.80	6.20
August,	17,748	90.41	9.59	18,807	90.22	9.78
September,	18,666	95.08	4.92	18,778	90.08	9.92
October,	19,320	98.42	1.58	19,291	92.54	7.46
November,	19,441	99.03	0.97	19,263	92.41	7.59
December,	19,631	100.00	–	19,437	93.24	6.76
Woollen Goods (Woven Goods and Yarn).						
January,	16,922	89.64	10.36	19,925	98.93	1.07
February,	17,105	90.61	9.39	19,997	99.29	0.71
March,	17,550	92.97	7.03	20,140	100.00	–
April,	17,876	94.69	5.31	19,847	98.55	1.45
May,	17,913	94.89	5.11	19,871	98.66	1.34
June,	17,452	92.45	7.55	19,796	98.29	1.71
July,	17,328	91.79	8.21	18,954	94.11	5.89
August,	17,031	90.22	9.78	18,162	90.18	9.82
September,	17,938	95.02	4.98	18,175	90.24	9.76
October,	18,630	98.69	1.31	18,675	92.73	7.27
November,	18,718	99.15	0.85	18,625	92.48	7.52
December,	18,878	100.00	–	18,747	93.08	6.92
Woollen Goods (Shoddy, Waste, etc.).						
January,	554	73.57	26.43	783	100.00	–
February,	606	80.48	19.52	738	94.25	5.75
March,	591	78.49	21.51	706	90.17	9.83
April,	602	79.95	20.05	669	85.44	14.56
May,	599	79.55	20.45	635	81.10	18.90
June,	602	79.95	20.05	587	74.97	25.03
July,	666	88.45	11.55	599	76.50	23.50
August,	717	95.22	4.78	645	82.38	17.62
September,	728	96.68	3.32	603	77.01	22.99
October,	690	91.63	8.37	616	78.67	21.33
November,	723	96.02	3.98	638	81.48	18.52
December,	753	100.00	–	690	88.12	11.88
Worsted Goods.						
January,	14,271	90.28	9.72	16,307	96.51	3.49
February,	14,207	89.87	10.13	16,594	98.21	1.79
March,	14,308	90.51	9.49	16,826	99.58	0.42
April,	14,784	93.52	6.48	16,897	100.00	–
May,	15,254	96.50	3.50	16,381	96.95	3.05
June,	14,930	94.45	5.55	15,105	89.39	10.61
July,	14,923	94.40	5.60	10,134	59.98	40.02
August,	15,069	95.33	4.67	13,419	79.42	20.58

* These figures include the persons employed in Woollen Goods (Woven Goods and Yarn) and Woollen Goods (Shoddy, Waste, etc.).

PERSONS EMPLOYED — BOTH SEXES. AGGREGATES, BY MONTHS — **1899, 1900** — Concluded.

Industries and Months.	1899			1900		
	Number of Persons Employed in Establishments Considered	Percentages of —		Number of Persons Employed in Establishments Considered	Percentages of —	
		Employment	Unemployment		Employment	Unemployment
Worsted Goods — Con.						
September,	15,429	97.60	2.40	13,470	79.72	20.28
October,	15,666	99.10	0.90	12,649	74.86	25.14
November,	15,808	100.00	–	12,612	74.64	25.36
December,	14,986	94.80	5.20	14,000	82.85	17.15
All Industries.						
January,	348,549	91.64	8.36	385,529	98.70	1.30
February,	353,504	92.95	7.05	389,508	99.72	0.28
March,	361,564	95.07	4.93	390,620	100.00	–
April,	365,688	96.15	3.85	384,907	98.54	1.46
May,	366,643	96.40	3.60	384,152	98.34	1.66
June,	365,057	95.98	4.02	377,087	96.54	3.46
July,	362,795	95.39	4.61	364,393	93.29	6.71
August,	366,288	96.31	3.69	369,646	94.63	5.37
September,	374,169	98.38	1.62	375,703	96.18	3.82
October,	376,602	99.02	0.98	380,108	97.31	2.69
November,	380,331	100.00	–	382,154	97.83	2.17
December,	379,824	99.87	0.13	384,224	98.36	1.64

WAGES AND EARNINGS: BY INDUSTRIES.

1899, 1900.

[In this presentation, the figures given under "Total Amount Paid in Wages During the Year" represent the returns made by the same establishment in each industry for the years 1899 and 1900. The average yearly earnings have been obtained by dividing the total amount paid in wages by the number representing the average number of persons employed during the same year (pages 98 and 99). It should be borne in mind that these sums were paid to wage earners only, and do not include the amounts paid to officers, clerks, or other salaried persons.]

Industries.	Number of Establishments Considered	Total Amount Paid in Wages during the Year		Average Yearly Earnings	
		1899	1900	1899	1900
Agricultural implements,	9	$315,660	$320,964	$485.63	$480.49
Arms and ammunition,	13	1,049,238	1,147,327	482.19	501.45
Artisans' tools,	78	1,258,150	1,390,959	532.44	526.48
Awnings, sails, tents, etc.,	36	112,281	116,999	499.03	527.02
Bicycles, tricycles, etc.,	12	783,163	615,667	562.21	528.02
Boots and shoes,	673	27,648,530	27,476,207	469.73	463.44
Boots and shoes (factory product),	445	25,610,783	25,461,216	480.21	473.85
Soles, heels, and cut stock,	191	1,645,449	1,599,750	366.39	358.13
Boot and shoe findings,	24	230,417	272,325	360.03	383.56
Stitching, heeling, etc.,	13	161,881	142,916	407.76	378.08
Boxes, barrels, kegs, etc.,	114	1,187,453	1,263,329	436.56	437.74
Boxes (paper),	67	830,089	851,844	340.48	349.26
Brick, tiles, and sewer pipe,	64	525,637	559,322	421.52	426.31
Brooms, brushes, and mops,	23	333,414	362,161	359.67	357.51
Building materials,	47	660,503	682,326	582.97	593.33
Burial cases, caskets, coffins, etc.,	6	100,281	104,160	583.03	581.90
Buttons and dress trimmings,	15	355,487	352,417	342.47	363.32
Carpetings,	12	1,650,257	1,722,180	365.91	373.66
Carriages and wagons,	124	1,134,445	1,153,278	589.63	600.67
Cement, kaolin, lime, and plaster,	9	64,476	57,580	470.63	456.98
Chemical preparations (compounded),	12	258,278	292,590	541.46	598.34
Clocks and watches,	10	1,420,028	1,693,994	519.59	557.79
Clothing,	150	3,597,763	3,918,684	365.78	372.25
Cooking, lighting, and heating apparatus,	43	1,261,984	1,256,386	648.92	598.56
Cordage and twine,	21	740,867	850,868	332.53	374.34
Cotton goods,	162	29,927,858	33,453,372	331.85	361.17
Cotton goods (woven),	115	26,274,053	29,328,351	332.71	363.36
Cotton yarn and thread,	39	3,492,235	3,954,869	323.83	345.10
Cotton waste,	8	161,570	170,152	375.74	377.28
Crayons, pencils, crucibles, etc.,	4	35,855	38,739	412.13	425.70
Drugs and medicines,	21	330,032	335,506	373.34	399.41
Dyestuffs,	6	66,091	59,046	524.53	487.98
Earthen, plaster, and stone ware,	10	98,952	89,526	480.35	476.20
Electrical apparatus and appliances,	19	2,423,808	2,741,448	538.15	521.68
Electroplating,	12	58,195	69,588	473.13	490.06
Emery and sand paper and cloth, etc.,	9	241,828	248,318	566.34	555.52
Fancy articles, etc.,	14	129,160	134,809	358.78	362.39
Fertilizers,	6	114,262	118,122	501.15	524.99
Fine arts and taxidermy,	3	10,228	12,598	538.32	547.74
Fireworks and matches,	3	31,785	35,711	429.53	420.13
Flax, hemp, and jute goods,	9	821,187	922,562	319.03	323.59

WAGES AND EARNINGS: BY INDUSTRIES—1899, 1900 — Concluded.

Industries.	Number of Establishments Considered	Total Amount Paid in Wages During the Year		Average Yearly Earnings	
		1899	1900	1899	1900
Food preparations,	341	$4,436,780	$4,281,853	$443.68	$428.14
Furniture,	129	2,762,667	2,815,207	486.30	500.13
Glass,	12	140,585	135,343	503.89	537.08
Glue, isinglass, and starch,	19	156,856	149,435	428.57	434.40
Hair work (animal and human),	4	42,737	38,535	381.58	363.54
Hose: rubber, linen, etc.,	5	16,003	20,801	500.09	520.03
Hosiery and knit goods,	34	1,889,295	2,285,720	313.84	337.28
Ink, mucilage, and paste,	7	37,904	36,289	445.93	442.55
Ivory, bone, shell, and horn goods, etc.,	23	471,720	490,129	424.97	415.36
Jewelry,	97	2,483,648	2,558,017	481.70	494.02
Leather,	90	2,326,116	2,327,200	467.09	482.12
Leather goods,	26	425,209	494,790	476.16	496.28
Liquors (bottled) and carbonated beverages,	29	134,923	145,730	541.86	537.75
Liquors (malt),	39	1,262,802	1,226,340	795.22	818.65
Liquors (distilled),	6	22,276	26,324	696.13	752.11
Lumber,	27	372,327	396,834	473.10	492.96
Machines and machinery,	358	13,364,375	16,416,828	545.84	554.19
Metals and metallic goods,	374	7,402,352	7,755,689	505.66	511.76
Models, lasts, and patterns,	46	417,623	411,117	705.44	701.56
Musical instruments and materials,	51	1,754,289	1,874,300	580.12	590.52
Oils and illuminating fluids,	10	74,063	70,896	536.69	549.58
Paints, colors, and crude chemicals,	29	148,519	153,769	544.03	551.14
Paper,	75	3,811,939	3,778,900	427.01	424.31
Paper goods,	40	1,265,614	1,355,782	382.94	381.37
Perfumes, toilet articles, etc.,	4	9,599	11,548	399.96	372.52
Photographs and photographic materials,	19	124,192	130,561	599.96	593.46
Polishes and dressing,	31	119,134	129,065	416.55	400.82
Printing, publishing, and bookbinding,	59	2,253,737	2,300,204	523.03	517.83
Print works, dye works, and bleacheries,	46	2,807,955	2,809,694	436.83	435.54
Railroad construction and equipment,	15	1,461,791	1,641,963	531.17	593.84
Rubber and elastic goods,	44	3,898,556	3,555,633	422.70	413.06
Saddlery and harness,	30	236,450	259,956	524.28	486.81
Scientific instruments and appliances,	21	690,070	766,038	439.82	438.49
Shipbuilding,	48	722,999	979,444	638.13	662.23
Silk and silk goods,	11	1,034,744	973,448	366.93	357.23
Sporting and athletic goods,	7	128,269	151,255	484.03	455.59
Stone,	197	2,167,555	2,233,206	517.07	534.64
Quarried,	47	880,917	932,780	437.61	453.91
Cut and monumental,	150	1,286,638	1,300,426	590.47	612.83
Straw and palm leaf goods,	19	1,229,940	1,244,429	456.72	450.23
Tallow, candles, soap, and grease,	56	354,776	361,340	496.19	501.17
Tobacco, snuff, and cigars,	74	1,302,371	1,465,309	618.41	640.71
Toys and games (children's),	11	216,248	250,298	377.40	403.06
Trunks and valises,	7	42,550	43,244	462.50	470.04
Whips, lashes, and stocks,	11	235,235	239,691	404.88	419.04
Wooden goods,	74	696,894	743,877	462.13	462.61
Woollen goods,	140	6,968,819	8,004,814	377.86	402.01
Woven goods and yarn,	116	6,677,560	7,703,031	375.38	400.10
Shoddy, waste, etc.,	24	291,259	301,783	445.35	457.94
Worsted goods,	34	5,480,110	5,459,841	365.98	375.66
All Industries,	4,645	$156,979,841	$167,449,273	$427.60	$439.57

CLASSIFIED WEEKLY WAGES: BY SELECTED INDUSTRIES.

1899, 1900.

[In this presentation is shown for the nine leading industries and for All Industries for 1899 and 1900, a classification by sex of the weekly wages, ranging from under $5 per week to $20 and over. The returns were made by manufacturers to cover the week during which the largest number of persons was employed. It should be borne in mind that these figures represent wage earners only; officers, clerks, or other salaried persons are not included. Considerations of space have led to the curtailment of this presentation to the nine leading industries, but the figures in detail for 1899 and 1900 for any industry desired may be obtained upon application to this Department.]

Industries and Classification of Weekly Wages.	1899				1900			
	Adults (21 Years of Age and over)		Young Persons (under 21 Years of Age)	Both Sexes	Adults (21 Years of Age and over)		Young Persons (under 21 Years of Age)	Both Sexes
	Males	Females			Males	Females		
*Boots and Shoes (Aggregates *).*	42,486	18,903	8,030	69,419	43,340	19,418	7,422	70,180
Under $5,	1,558	2,774	3,741	8,073	1,715	2,925	3,356	7,996
$5 but under $6,	1,345	1,866	1,491	4,702	1,500	2,147	1,413	5,060
$6 but under $7,	1,899	2,386	1,268	5,553	2,138	2,408	1,200	5,746
$7 but under $8,	2,558	2,455	823	5,836	2,593	2,465	742	5,800
$8 but under $9,	3,136	2,216	363	5 715	3,069	2,214	343	5,626
$9 but under $10,	4,809	2,288	217	7,314	4,956	2,253	218	7,427
$10 but under $12,	7,329	2,509	91	9,929	7,439	2,652	103	10,194
$12 but under $15,	9,800	1,772	31	11,603	9,475	1,713	35	11,223
$15 but under $20,	7,447	594	5	8,046	7,722	576	12	8,310
$20 and over,	2,605	43	–	2,648	2,733	65	–	2,798
Boots and Shoes (Factory Product).	39,090	17,167	6,521	62,778	39,774	17,351	6,206	63,331
Under $5,	1,401	2,234	2,891	6,526	1,534	2,242	2,666	6,442
$5 but under $6,	1,201	1,517	1,227	3,945	1,347	1,677	1,200	4,224
$6 but under $7,	1,654	2,028	1,052	4,734	1,807	2,043	1,030	4,880
$7 but under $8,	2,234	2,280	726	5,240	2,273	2,270	665	5,208
$8 but under $9,	2,818	2,102	323	5,243	2,732	2,089	301	5,122
$9 but under $10,	4,251	2,208	181	6,640	4,410	2,158	197	6,765
$10 but under $12,	6,705	2,434	85	9,224	6,705	2,572	101	9,378
$12 but under $15,	9,094	1,734	31	10,859	8,807	1,670	34	10,511
$15 but under $20,	7,182	588	5	7,775	7,479	566	12	8,057
$20 and over,	2,550	42	–	2,592	2,680	64	–	2,744
Boots and Shoes (Soles, Heels, and Cut Stock).	2,859	1,200	1,300	5,359	3,003	1,408	1,023	5,434
Under $5,	123	404	705	1,232	161	497	569	1,227
$5 but under $6,	135	241	226	602	144	359	183	686
$6 but under $7,	219	288	195	702	309	263	146	718
$7 but under $8,	276	131	93	500	272	146	74	492
$8 but under $9,	273	58	40	371	289	66	39	394
$9 but under $10,	497	40	36	573	474	37	11	522
$10 but under $12,	535	32	5	572	606	35	1	642
$12 but under $15,	585	5	–	590	555	3	–	558
$15 but under $20,	186	1	–	187	164	2	–	166
$20 and over,	30	–	–	30	29	–	–	29

* These figures include persons employed in Boots and Shoes (Factory Product); Boots and Shoes (Soles, Heels, and Cut Stock); Boots and Shoes (Findings); and Boots and Shoes (Stitching, Heeling, etc.).

CLASSIFIED WEEKLY WAGES: BY SELECTED INDUSTRIES —1899, 1900— Continued.

Industries and Classification of Weekly Wages.	1899				1900			
	Adults (21 Years of Age and over)		Young Persons (under 21 Years of Age)	Both Sexes	Adults (21 Years of Age and over)		Young Persons (under 21 Years of Age)	Both Sexes
	Males	Females			Males	Females		
Boots and Shoes (Findings).	335	285	167	787	400	351	143	894
Under $5,	33	97	119	249	20	129	84	233
$5 but under $6,	9	87	33	129	9	91	25	125
$6 but under $7,	21	46	14	81	19	60	20	99
$7 but under $8,	39	17	1	57	32	25	2	59
$8 but under $9,	34	17	–	51	34	20	2	56
$9 but under $10,	33	6	–	39	43	13	8	64
$10 but under $12,	54	6	–	60	92	7	1	100
$12 but under $15,	63	5	–	68	77	5	1	83
$15 but under $20,	35	3	–	38	56	1	–	57
$20 and over,	14	1	–	15	18	–	–	18
Boots and Shoes (Stitching, Heeling, etc.).	202	251	42	495	163	308	50	521
Under $5,	1	39	26	66	–	57	37	94
$5 but under $6,	–	21	5	26	–	20	5	25
$6 but under $7,	5	24	7	36	3	42	4	49
$7 but under $8,	9	27	3	39	16	24	1	41
$8 but under $9,	11	39	–	50	14	39	1	54
$9 but under $10,	28	34	–	62	29	45	2	76
$10 but under $12,	35	37	1	73	36	38	–	74
$12 but under $15,	58	28	–	86	36	35	–	71
$15 but under $20,	44	2	–	46	23	7	–	30
$20 and over,	11	–	–	11	6	1	–	7
Carpetings.	2,079	1,908	853	4,840	1,946	1,860	1,127	4,933
Under $5,	209	259	528	996	86	317	681	1,084
$5 but under $6,	118	470	174	762	97	312	300	709
$6 but under $7,	225	265	54	544	194	220	63	477
$7 but under $8,	217	261	48	526	196	187	33	416
$8 but under $9,	262	195	22	479	312	300	30	642
$9 but under $10,	238	281	22	541	225	236	14	475
$10 but under $12,	296	153	2	451	280	224	6	510
$12 but under $15,	299	24	1	324	277	64	–	341
$15 but under $20,	162	–	2	164	235	–	–	235
$20 and over,	53	–	–	53	44	–	–	44
Cotton Goods (Aggregates).*	40,652	33,732	19,254	93,638	42,618	35,801	18,031	96,450
Under $5,	3,924	6,904	10,456	21,284	3,360	5,885	8,860	18,105
$5 but under $6,	3,757	6,144	4,821	14,722	3,385	5,619	4,611	13,615
$6 but under $7,	7,076	7,370	2,590	17,036	6,617	7,730	2,790	17,137
$7 but under $8,	6,017	6,214	971	13,202	6,273	6,281	1,160	13,714
$8 but under $9,	5,522	4,325	237	10,084	5,174	5,233	351	10,758
$9 but under $10,	4,539	2,025	143	6,707	5,750	3,676	212	9,638
$10 but under $12,	4,740	647	33	5,420	5,616	1,264	42	6,922
$12 but under $15,	3,065	96	2	3,163	4,090	96	5	4,191
$15 but under $20,	1,303	6	1	1,310	1,588	17	–	1,605
$20 and over,	709	1	–	710	765	–	–	765
Cotton Goods (Woven).	36,405	29,880	15,648	81,933	38,196	31,662	14,498	84,356
Under $5,	3,722	6,294	8,855	18,871	3,238	5,377	7,151	15,766
$5 but under $6,	3,505	5,443	3,932	12,880	3,082	4,860	3,768	11,710
$6 but under $7,	6,315	6,325	1,788	14,428	5,778	6,628	2,107	14,513
$7 but under $8,	5,345	5,419	743	11,507	5,552	5,418	915	11,885
$8 but under $9,	5,138	3,879	187	9,204	4,781	4,658	313	9,752
$9 but under $10,	3,977	1,846	125	5,948	5,232	3,427	202	8,861
$10 but under $12,	4,292	590	15	4,897	5,162	1,185	37	6,384
$12 but under $15,	2,547	78	2	2,627	3,527	93	5	3,625
$15 but under $20,	959	5	1	965	1,176	16	–	1,192
$20 and over,	605	1	–	606	668	–	–	668

* These figures include the persons employed in Cotton Goods (Woven); Cotton Yarn and Thread; and Cotton Waste.

CLASSIFIED WEEKLY WAGES: BY SELECTED INDUSTRIES — 1899, 1900 — Continued.

Industries and Classification of Weekly Wages.	1899				1900			
	Adults (21 Years of Age and over)		Young Persons (under 21 Years of Age)	Both Sexes	Adults (21 Years of Age and over)		Young Persons (under 21 Years of Age)	Both Sexes
	Males	Females			Males	Females		
Cotton Goods (Cotton Yarn and Thread).	3,933	3,730	3,585	11,248	4,098	4,013	3,507	11,618
Under $5,	201	545	1,590	2,336	120	446	1,696	2,262
$5 but under $6,	249	660	882	1,791	303	731	833	1,867
$6 but under $7,	718	1,036	802	2,556	787	1,074	683	2,544
$7 but under $8,	623	788	225	1,636	671	862	242	1,775
$8 but under $9,	355	446	50	851	364	571	38	973
$9 but under $10,	433	179	18	630	388	246	10	644
$10 but under $12,	422	57	18	497	429	79	5	513
$12 but under $15,	504	18	-	522	547	3	-	550
$15 but under $20,	327	1	-	328	395	1	-	396
$20 and over,	101	-	-	101	94	-	-	94
Cotton Goods (Waste).	314	122	21	457	324	126	26	476
Under $5,	1	65	11	77	2	62	13	77
$5 but under $6,	3	41	7	51	-	28	10	38
$6 but under $7,	43	9	-	52	52	28	-	80
$7 but under $8,	49	7	3	59	50	1	3	54
$8 but under $9,	29	-	-	29	29	4	-	33
$9 but under $10,	129	-	-	129	130	3	-	133
$10 but under $12,	26	-	-	26	25	-	-	25
$12 but under $15,	14	-	-	14	16	-	-	16
$15 but under $20,	17	-	-	17	17	-	-	17
$20 and over,	3	-	-	3	3	-	-	3
Leather.	5,692	30	241	5,963	5,667	47	248	5,962
Under $5,	53	-	53	106	71	-	84	155
$5 but under $6,	145	3	75	223	92	6	71	169
$6 but under $7,	409	21	62	492	300	35	50	385
$7 but under $8,	646	4	35	685	642	1	16	659
$8 but under $9,	656	1	7	664	731	-	9	740
$9 but under $10,	1,387	-	8	1,395	1,337	1	16	1,354
$10 but under $12,	1,278	-	-	1,278	1,355	2	2	1,359
$12 but under $15,	737	1	1	739	778	2	-	780
$15 but under $20,	305	-	-	305	276	-	-	276
$20 and over,	76	-	-	76	85	-	-	85
Machines and Machinery.	26,804	296	2,011	29,111	31,440	338	1,792	33,570
Under $5,	834	49	858	1,741	1,206	43	729	1,978
$5 but under $6,	686	74	367	1,127	1,003	81	375	1,459
$6 but under $7,	1,017	56	420	1,493	1,410	72	385	1,867
$7 but under $8,	2,198	47	286	2,531	2,639	73	220	2,932
$8 but under $9,	2,421	44	47	2,512	3,569	44	32	3,645
$9 but under $10,	3,841	19	22	3,882	4,052	11	19	4,082
$10 but under $12,	4,289	5	10	4,304	4,781	12	28	4,821
$12 but under $15,	5,731	-	1	5,732	6,188	-	4	6,192
$15 but under $20,	4,797	2	-	4,799	5,402	2	-	5,404
$20 and over,	990	-	-	990	1,190	-	-	1,190
Metals and Metallic Goods.	13,744	1,109	2,039	16,892	14,356	1,301	1,650	17,307
Under $5,	251	204	910	1,365	300	274	723	1,297
$5 but under $6,	266	185	426	877	368	260	463	1,091
$6 but under $7,	668	397	408	1,473	779	424	255	1,458
$7 but under $8,	1,045	135	170	1,350	1,079	149	126	1,354
$8 but under $9,	1,020	86	43	1,149	1,004	93	33	1,130
$9 but under $10,	2,118	55	59	2,232	2,251	63	29	2,343
$10 but under $12,	2,400	30	16	2,446	2,421	24	13	2,458
$12 but under $15,	2,527	14	7	2,548	2,627	7	7	2,641
$15 but under $20,	2,775	2	-	2,777	2,864	7	1	2,872
$20 and over,	674	1	-	675	663	-	-	663

CLASSIFIED WEEKLY WAGES: BY SELECTED INDUSTRIES —1899, 1900— Continued.

Industries and Classification of Weekly Wages.	1899				1900			
	Adults (21 Years of Age and over)		Young Persons (under 21 Years of Age)	Both Sexes	Adults (21 Years of Age and over)		Young Persons (under 21 Years of Age)	Both Sexes
	Males	Females			Males	Females		
Paper.	5,638	3,554	565	9,757	5,663	3,491	517	9,671
Under $5,	74	836	201	1,111	79	739	160	978
$5 but under $6,	80	993	126	1,199	92	916	129	1,137
$6 but under $7,	187	1,051	149	1,387	206	1,153	145	1,504
$7 but under $8,	684	380	63	1,127	644	418	51	1,113
$8 but under $9,	679	179	7	865	556	171	9	736
$9 but under $10,	1,540	78	17	1,635	1,649	55	19	1,723
$10 but under $12,	756	19	1	776	765	17	4	786
$12 but under $15,	841	12	1	854	847	18	-	865
$15 but under $20,	646	6	-	652	664	4	-	668
$20 and over,	151	-	-	151	161	-	-	161
Woollen Goods (Aggregates).*	12,144	6,042	2,913	21,099	12,893	6,715	2,820	22,428
Under $5,	502	763	1,621	2,886	365	790	1,307	2,462
$5 but under $6,	570	866	695	2,131	454	821	794	2,069
$6 but under $7,	1,600	1,439	344	3,383	1,427	1,463	404	3,294
$7 but under $8,	2,266	1,279	155	3,700	2,596	1,265	169	4,030
$8 but under $9,	1,842	919	65	2,826	1,863	1,055	91	3,009
$9 but under $10,	1,751	396	21	2,168	2,121	667	30	2,818
$10 but under $12,	1,736	321	9	2,066	1,837	477	17	2,331
$12 but under $15,	1,131	57	3	1,191	1,369	149	8	1,526
$15 but under $20,	493	2	-	495	586	19	-	605
$20 and over,	253	-	-	253	275	9	-	284
Woollen Goods (Woven Goods and Yarn).	11,412	5,968	2,901	20,281	12,125	6,626	2,801	21,552
Under $5,	481	741	1,615	2,837	348	771	1,296	2,415
$5 but under $6,	554	854	695	2,103	445	799	793	2,037
$6 but under $7,	1,572	1,409	342	3,323	1,391	1,429	398	3,218
$7 but under $8,	2,176	1,275	153	3,604	2,498	1,257	168	3,923
$8 but under $9,	1,789	917	65	2,771	1,794	1,054	91	2,939
$9 but under $10,	1,477	395	19	1,891	1,837	666	30	2,533
$10 but under $12,	1,638	319	9	1,966	1,737	475	17	2,229
$12 but under $15,	1,017	56	3	1,076	1,254	147	8	1,409
$15 but under $20,	465	2	-	467	555	19	-	574
$20 and over,	243	-	-	243	266	9	-	275
Woollen Goods (Shoddy, Waste, etc.).	732	74	12	818	768	89	19	876
Under $5,	21	22	6	49	17	19	11	47
$5 but under $6,	16	12	-	28	9	22	1	32
$6 but under $7,	28	30	2	60	36	34	6	76
$7 but under $8,	90	4	2	96	98	8	1	107
$8 but under $9,	53	2	-	55	69	1	-	70
$9 but under $10,	274	1	2	277	284	1	-	285
$10 but under $12,	98	2	-	100	100	2	-	102
$12 but under $15,	114	1	-	115	115	2	-	117
$15 but under $20,	28	-	-	28	31	-	-	31
$20 and over,	10	-	-	10	9	-	-	9
Worsted Goods.	7,423	5,013	4,413	16,849	7,649	5,413	4,282	17,344
Under $5,	223	581	1,709	2,513	206	513	1,649	2,368
$5 but under $6,	485	1,280	1,299	3,064	433	1,210	1,350	2,993
$6 but under $7,	843	1,476	1,128	3,447	675	1,545	971	3,191
$7 but under $8,	1,452	648	232	2,332	1,070	636	195	1,901
$8 but under $9,	836	387	24	1,247	1,419	523	92	2,034
$9 but under $10,	841	276	15	1,132	766	511	16	1,293
$10 but under $12,	1,194	272	5	1,471	1,203	341	8	1,552
$12 but under $15,	1,094	67	1	1,162	1,393	115	1	1,509
$15 but under $20,	315	24	-	339	339	16	-	355
$20 and over,	140	2	-	142	145	3	-	148

* These figures include the persons employed in Woollen Goods (Woven Goods and Yarn) and Shoddy, Waste, etc.

CLASSIFIED WEEKLY WAGES: BY SELECTED INDUSTRIES —1899, 1900— Concluded.

Industries and Classification of Weekly Wages.	1899				1900			
	Adults (21 Years of Age and over)		Young Persons (under 21 Years of Age)	Both Sexes	Adults (21 Years of Age and over)		Young Persons (under 21 Years of Age)	Both Sexes
	Males	Females			Males	Females		
All Industries.	249,767	107,523	61,340	418,630	262,060	113,661	56,790	432,511
Under $5,	9,792	19,256	31,383	60,431	9,658	18,829	27,355	55,842
$5 but under $6,	9,662	17,758	13,746	41,166	9,869	17,944	13,454	41,267
$6 but under $7,	18,544	21,721	9,091	49,356	18,539	22,819	8,717	50,075
$7 but under $8,	23,983	16,988	4,176	45,147	25,613	17,302	4,046	46,961
$8 but under $9,	24,468	12,713	1,427	38,608	26,107	14,033	1,606	41,746
$9 but under $10,	34,738	8,490	883	44,111	37,105	10,710	923	48,738
$10 but under $12,	39,312	6,307	475	46,094	41,432	7,532	497	49,461
$12 but under $15,	44,487	3,187	134	47,808	46,337	3,332	159	49,828
$15 but under $20,	33,950	976	21	34,947	36,107	1,000	30	37,137
$20 and over,	10,831	127	4	10,962	11,293	160	3	11,456

Analysis.

From the presentation on pages 96 and 97, we find that the average number of males employed in 1899 was 242,999; the average number of females, 124,119; and the average for both sexes, 367,118. In 1900, the average number of males rose to 254,397, females to 126,544, and both sexes to 380,941, the percentages of increase over the preceding year being as follows: Males, 4.69; females, 1.95; both sexes, 3.77.

The proportion of males employed in All Industries in 1899 was 66.19 per cent and that of females, 33.81 per cent; in 1900, the males constituted 66.78 per cent and females 33.22 per cent. In other words, in 1899, about 66 out of every one hundred persons employed were males and about 34 out of every one hundred persons employed were females, and in 1900, about 67 in each one hundred persons employed were males and about 33 in each one hundred were females. As regards All Industries, practically these same proportions obtained in the Census years 1875, 1885, and 1895, but when the industries are considered individually, variations appear which it may be interesting to note. For this purpose we bring forward in the following table the figures for 1899 and 1900 in connection with those for the Census years 1875, 1885, and 1895:

Industries and Sex.	Percentages				
	1875	1885	1895	1899	1900
Boots and Shoes.	100.00	100.00	100.00	100.00	100.00
Males,	76.45	69.46	69.35	68.45	68.13
Females,	23.55	30.54	30.65	31.55	31.87
Carpetings.	100.00	100.00	100.00	100.00	100.00
Males,	43.25	42.12	47.79	49.53	48.62
Females,	56.75	57.88	52.21	50.47	51.38
Cotton Goods.	100.00	100.00	100.00	100.00	100.00
Males,	41.24	44.96	49.55	51.87	52.34
Females,	58.76	55.04	50.45	48.13	47.66
Leather.	*100.00	*100.00	*100.00	100.00	100.00
Males,	96.59	97.85	95.70	99.26	98.90
Females,	3.41	2.15	4.30	0.74	1.10
Machines and Machinery.	100.00	100.00	100.00	100.00	100.00
Males,	97.36	98.57	98.32	98.57	98.68
Females,	2.64	1.43	1.68	1.43	1.32
Metals and Metallic Goods.	100.00	100.00	100.00	100.00	100.00
Males,	91.98	90.95	91.99	89.66	89.60
Females,	8.02	9.05	8.01	10.34	10.40
Paper.	†100.00	†100.00	†100.00	100.00	100.00
Males,	42.51	56.08	55.34	59.94	61.54
Females,	57.49	43.92	44.66	40.06	38.46
Woollen Goods.	100.00	100.00	100.00	100.00	100.00
Males,	59.54	61.60	64.83	63.50	63.78
Females,	40.46	38.40	35.17	36.50	36.22
Worsted Goods.	100.00	100.00	100.00	100.00	100.00
Males,	38.69	42.13	52.10	53.01	53.03
Females,	61.31	57.87	47.90	46.99	46.97
Nine Industries.	100.00	100.00	100.00	100.00	100.00
Males,	63.58	65.42	65.88	65.21	65.97
Females,	36.42	34.58	34.12	34.79	34.03
Other Industries.	100.00	100.00	100.00	100.00	100.00
Males,	76.64	74.83	75.15	68.04	68.32
Females,	23.36	25.17	24.85	31.96	31.68
All Industries.	100.00	100.00	100.00	100.00	100.00
Males,	69.36	69.55	69.87	66.19	66.78
Females,	30.64	30.45	30.13	33.81	33.22

* Includes the manufacture of Leather Goods, which in 1899 and 1900 is presented as a separate industry.

† Includes the manufacture of Paper Goods, which in 1899 and 1900 is presented as a separate industry.

Considering the nine industries in the aggregate, it is seen that in 1875 out of every one hundred persons employed about

64 were males and 36 were females. These proportions are based upon all the establishments reporting under a general Census, and the full number of persons employed in all manufacturing and mechanical industries. On the basis of these annual reports, it will be noted that the variations from these proportions are not material. In two of the nine industries, however, namely, Boots and Shoes and Metals and Metallic Goods, it is shown that the proportion of females employed has increased in 1900 as compared with 1875. In each of the other nine industries, as compared with that year, a decline for females is shown; that is to say, although a numerical increase in the persons employed may appear, the relative proportion of females in every one hundred persons exhibits a decrease.

In the following table, we show the percentages of increase or decrease for the nine leading industries, the other industries, and for All Industries in the average number of males and females, in the average of both sexes, the smallest number, the greatest number, and the excess of greatest over smallest:

Industries.	Percentages of Increase (+) or Decrease (−) in 1900 in—					
	Average Number of Persons Employed			Smallest	Greatest	Range
	Males	Females	Both Sexes			
Boots and shoes,	+0.25	+1.76	+0.73	+1.03	+2.15	+4.37
Boots and shoes (factory product),	+0.45	+1.42	+0.75	+1.32	+1.97	+3.26
Soles, heels, and cut stock,	−1.93	+2.29	−0.53	−4.35	+2.36	+17.26
Boot and shoe findings,	+9.20	+12.74	+10.94	+8.89	+12.97	+20.75
Stitching, heeling, etc.,	−22.56	+7.73	−4.79	+14.75	+5.35	−4.13
Carpetings,	+0.31	+4.04	+2.20	−11.59	+2.36	+108.93
Cotton goods,	+3.64	+1.70	+2.71	+0.63	+3.09	+27.68
Cotton goods (woven),	+2.54	+1.85	+2.21	−0.23	+3.03	+40.87
Cotton yarn and thread,	+12.06	+0.57	+0.27	+7.01	+3.37	−14.90
Cotton waste,	+4.93	+4.79	+4.88	+4.29	+5.03	+9.84
Leather,	−3.42	+43.24	−3.07	−9.30	−0.37	+19.51
Machines and machinery,	+21.12	+12.00	+20.99	+28.41	+14.52	−14.93
Metals and metallic goods,	+3.46	+4.10	+3.52	+4.07	+2.14	−2.61
Paper,	+2.43	−4.22	−0.24	−5.30	+0.08	+24.14
Woollen goods,	+8.44	+7.15	+7.97	+9.80	+4.14	−8.90
Woven goods and yarn,	+8.92	+7.07	+8.23	+10.25	+4.06	−10.54
Shoddy, waste, etc.,	−0.67	+15.25	+0.76	−4.26	+5.92	+19.27
Worsted goods,	−2.89	−3.00	−2.94	−36.87	+2.93	+155.02
Nine industries,	+5.16	+1.67	+3.95	+1.14	+3.90	+13.43
Other industries,	+3.83	+2.53	+3.42	+3.21	+2.38	+0.61
All industries,	+4.69	+1.95	+3.77	+1.83	+3.35	+7.78

So far as the leading industries are concerned, the highest percentage of increase in the average number of males employed (21.12) is found in Machines and Machinery, and the highest percentage of increase in the average number of females employed appears in Leather, the percentage being 43.24. In Boots and Shoes (in the aggregate), males increased 0.25 per cent and females 1.76 per cent. Considering this industry in detail, we find that only Boots and Shoes (Factory Product) and Boot and Shoe Findings show increases in the average number of males employed, while in each of the subdivisions of this industry the average number of females employed exhibits increase. Considering the aggregate for the nine industries, we find that the average number of males increased 5.16 per cent, the average number of females increased 1.67 per cent, and the average number of persons of both sexes increased 3.95 per cent. There was an increase of 1.14 per cent in the aggregate of smallest number of persons employed at any one time, and an increase of 3.90 per cent in the aggregate of greatest number of persons employed at any one time, the "range" or excess of greatest over smallest number of persons employed being 13.43 per cent more in 1900 than in 1899. From this last percentage, therefore, it is apparent that, although in the majority of the industries a larger average number of persons was employed, nevertheless, in 1900, employment was not so continuous as in 1899. Referring to page 101, it is seen that the excess of greatest over smallest number for All Industries was 108,647 in 1899 and 117,045 in 1900; that is to say, 8,398 more persons were unemployed in the latter than in the former year; the duration of this unemployment it is, of course, impossible to ascertain.

For the purpose of indicating this range of employment and unemployment in a more graphic manner, the following table is presented:

Comparative Years.	Number of Establishments Considered	Percentages		
		Persons Employed at Periods of Employment of Smallest Number of Persons Employed at Periods of Employment of Greatest Number	Range (Unemployed at some time During the Year)	Persons Employed at Periods of Employment of Greatest Number
1886,	1,027	77.33	22.67	100.00
1887,	1,027	78.57	21.43	100.00
1887,	1,140	78.72	21.28	100.00
1888,	1,140	77.18	22.82	100.00
1888,	1,364	76.64	23.36	100.00
1889,	1,364	79.52	20.48	100.00
1889,	3,041	76.67	23.33	100.00
1890,	3,041	78.05	21.95	100.00
1890,	3,745	77.91	22.09	100.00
1891,	3,745	78.50	21.50	100.00
1891,	4,473	77.52	22.48	100.00
1892,	4,473	76.90	23.10	100.00
1892,	4,397	77.66	22.34	100.00
1893,	4,397	64.38	35.62	100.00
1893,	4,093	65.17	34.83	100.00
1894,	4,093	66.55	33.45	100.00
1894,	3,629	67.11	32.89	100.00
1895,	3,629	74.40	25.60	100.00
1895,	4,609	73.53	26.47	100.00
1896,	4,609	66.52	33.48	100.00
1896,	4,695	67.32	32.68	100.00
1897,	4,695	71.74	28.26	100.00
1897,	4,701	72.13	27.87	100.00
1898,	4,701	70.36	29.64	100.00
1898,	4,740	70.21	29.79	100.00
1899,	4,740	74.19	25.81	100.00
1899,	4,645	74.17	25.83	100.00
1900,	4,645	73.08	26.92	100.00

There are 14 groups in this table, each exhibiting a comparison between identical establishments making return in the years specified. The greatest number of persons employed is considered as 100 per cent. If this greatest number was continuously employed it is apparent that no smaller percentage would appear and there would be no distinction between the "greatest" and the "smallest;" but as at the periods of employment of the smallest number less persons are em-

ployed, it follows that the difference between the number employed at the two periods may be represented by a percentage indicating the proportion of persons unemployed at some time during the year. Taking the last group in the table, the percentages show that in 1899, about 26 persons in every 100 (25.83 per cent) of the maximum number employed were out of work at some time during the year, the length of the term of unemployment, of course, not being determined. In 1900, the corresponding percentage indicates that about 27 persons in every 100 (26.92 per cent) of the maximum number were out of work. The range of unemployment, therefore, was greater in 1900 than in 1899, or, in other words, the opportunities for continuous employment were slightly less in 1900, although the fact remains that, on an average, nearly 4 per cent more persons were employed in that year than in 1899.

The statistics concerning employment and unemployment which have just been considered are based upon the returns made by each establishment. Upon pages 102 to 106, employment on the basis of industries is shown. This presentation shows the aggregate number of persons employed during each month for the nine leading industries and for All Industries. We reproduce, in the following table, the figures for All Industries:

Months.	Number of Persons Employed		Percentages of Employment		Percentages of Unemployment	
	1899	1900	1899	1900	1899	1900
January,	348,549	385,529	91.64	98.70	8.36	1.30
February,	353,504	389,508	92.95	99.72	7.05	0.28
March,	361,564	390,620	95.07	100.00	4.93	-
April,	365,688	384,907	96.15	98.54	3.85	1.46
May,	366,643	384,152	96.40	98.34	3.60	1.66
June,	365,057	377,087	95.98	96.54	4.02	3.46
July,	362,795	364,393	95.39	93.29	4.61	6.71
August,	366,288	369,646	96.31	94.63	3.69	5.37
September,	374,169	375,703	98.38	96.18	1.62	3.82
October,	376,602	380,108	99.02	97.31	0.98	2.69
November,	380,331	382,154	100.00	97.83	-	2.17
December,	379,824	384,224	99.87	98.36	0.13	1.64

The largest number of persons employed in any one month is considered as 100 per cent. In 1899, this percentage is found in November and in 1900, in March. That is to say, on the

basis of industries, the largest number of persons employed is found in these months, respectively. The month, therefore, which exhibits the largest percentage of unemployment would be that in which the smallest number of persons was employed. This is found in January, 1899, and in July, 1900, and it will be noted that from June to December in the latter year the percentages of unemployment are considerably larger than those shown for the earlier months of 1900, but in December a partial recovery is noted. In Boots and Shoes (Aggregates), in 1899, the largest number of persons was employed in the month of September. In the month of January, in that year, 9.75 per cent of this maximum number were out of employment, this being the highest percentage of unemployment reached in that year. On the other hand, in 1900 prior to June, the highest percentage of unemployment is but 7.19, found in the month of May. But in June, 10.53 per cent of the maximum number employed in 1900 are found out of employment, 12.02 per cent in the month of July, and, during the remaining months of the year, until December, the percentages of unemployment are found to be higher than in the corresponding months of 1899. Considering the subdivisions of this industry, the greatest percentages of unemployment are found in Soles, Heels, and Cut Stock; and Stitching, Heeling, etc.

In Cotton Goods (Aggregates) employment was more nearly uniform. Seasonal disturbances in this industry are much less marked than in Boots and Shoes. During 1899, the percentage of unemployment did not rise above 3.75, this percentage being shown for the month of January, but in 1900 it reached 4.10 in the month of August, falling again to 3.81 in September and in no other month in 1900 did unemployment in this industry reach three per cent. The industry showing the greatest amount of unemployment in 1900, however, is Worsted Goods. Here the conditions were at once abnormal and indicative of unusual industrial depression, the highest percentage of unemployment being reached in July, when 40.02 per cent of the maximum number of persons employed were out of work, and this condition continued with varying intensity during the remainder of the year.

It may be interesting to compare the percentages of unemployment for the other leading industries. Considerations of space, however, have led to the curtailment of the presentation to the nine industries as given on pages 102 to 106, but the figures in detail for 1899 and 1900 for any industry desired may be obtained upon application to this Department.

The presentation on pages 107 and 108 shows the aggregate amount of wages paid during each of the years 1899 and 1900, and the average yearly earnings in each industry. In the following table, we reproduce the wages paid in the nine leading industries with the increase or decrease in 1900 as compared with 1899 in amounts and percentages:

Industries.	Total Amount Paid in Wages During the Year		Increase (+) or Decrease (−) in 1900	
	1899	1900	Amounts	Percentages
Boots and shoes,	$27,648,530	$27,476,207	−$172,323	−0.62
Carpetings,	1,650,257	1,722,180	+71,923	+4.36
Cotton goods,	29,927,858	33,453,372	+3,525,514	+11.78
Leather,	2,326,116	2,327,200	+1,084	+0.05
Machines and machinery,	13,364,375	16,416,828	+3,052,453	+22.84
Metals and metallic goods,	7,402,352	7,755,689	+353,337	+4.77
Paper,	3,811,939	3,778,900	−33,039	−0.87
Woollen goods,	6,968,819	8,004,814	+1,035,995	+14.87
Worsted goods,	5,480,110	5,459,841	−20,269	−0.37
Nine industries,	98,580,356	106,395,031	+7,814,675	+7.93
Other industries,	58,399,485	61,054,242	+2,654,757	+4.55
All industries,	156,979,841	167,449,273	+10,469,432	+6.67

Considering the line for All Industries, we find that in 1899 there was paid to the employés in the 4,645 establishments the sum of $156,979,841, and in 1900, $167,449,273, an increase in the latter year of $10,469,432, or 6.67 per cent. The increase for the nine leading industries in the aggregate was 7.93 per cent, and for industries other than the nine, 4.55 per cent. Each of the industries, Boots and Shoes, Paper, and Worsted Goods, shows a slight decrease, while gains are shown for the other principal industries, ranging from 0.05 per cent in Leather to 22.84 per cent in Machines and Machinery.

On pages 107 and 108, average yearly earnings for 1899 and 1900 are presented. These averages are obtained by dividing

the total amount paid in wages by the figure representing the average number of persons employed, without regard to sex or age. On this basis, we find that in the 4,645 establishments the average amount earned by each man, woman, and young person in 1899 was $427.60, and in 1900, $439.57, a gain in 1900 over 1899 of $11.97, or 2.80 per cent. In the table which follows, increases and decreases in 1900 as compared with 1899 are shown in amounts and percentages for the leading industries in detail and in the aggregate:

Industries.	Average Yearly Earnings		Increase (+) or Decrease (−) in 1900	
	1899	1900	Amounts	Percentages
Boots and shoes,	$469.73	$463.44	−$6.29	−1.34
Boots and shoes (factory product),	480.21	473.85	−6.36	−1.32
Soles, heels, and cut stock,	366.39	358.13	−8.26	−2.25
Boot and shoe findings,	360.03	383.56	+23.53	+6.54
Stitching, heeling, etc.,	407.76	378.08	−29.68	−7.28
Carpetings,	365.91	373.66	+7.75	+2.12
Cotton goods,	331.85	361.17	+29.32	+8.84
Cotton goods (woven),	332.71	363.36	+30.65	+9.21
Cotton yarn and thread,	323.83	345.10	+21.27	+6.57
Cotton waste,	375.74	377.28	+1.54	+0.41
Leather,	467.09	482.12	+15.03	+3.22
Machines and machinery,	545.84	554.19	+8.35	+1.53
Metals and metallic goods,	505.66	511.76	+6.10	+1.21
Paper,	427.01	424.31	−2.70	−0.63
Woollen goods,	377.86	402.01	+24.15	+6.39
Woven goods and yarn,	375.38	400.10	+24.72	+6.59
Shoddy, waste, etc.,	445.35	457.94	+12.59	+2.83
Worsted goods,	365.98	375.66	+9.68	+2.64
Nine industries,	410.75	426.47	+15.72	+3.83
Other industries,	459.42	464.42	+5.00	+1.09
All industries,	427.60	439.57	+11.97	+2.80

Boots and Shoes, in the aggregate, exhibits a decrease in average yearly earnings of slightly over $6 per individual, or 1.34 per cent; one of the subdivisions of this industry, Boot and Shoe Findings, shows an increase of 6.54 per cent or nearly $24 per annum, on an average, for each person employed. Each of the subdivisions of Cotton Goods and Woollen Goods shows an increase, the largest being in Cotton Goods (Woven). The nine leading industries in the aggregate exhibit a larger percentage of increase than that shown for All Industries, the percentage being 3.83.

Average yearly earnings, however, should not be considered as indicative of the *rate* of wages. They merely show that, on an average, each person employed received more or less in one year than in another but have little statistical value when considered alone, for males and females, young persons and adults, day hands and piece hands, are indiscriminately included in the figure which represents the average number of persons employed and which, as has been stated, is used as the divisor in obtaining the averages. The duration of employment and the question of skill also form important elements in determining these average earnings and to them are undoubtedly due many of the fluctuations which may be observed in the different industries.

The highest average yearly earnings in 1900 are found in Liquors (Malt), the amount earned by each employé, on an average, being $818.65. In this industry, all of the employés are males, and according to the Census of 1895, 99.88 per cent were either day or hour hands, and 0.12 per cent were piece hands. The lowest average yearly earnings are found in Flax, Hemp, and Jute Goods, the average amount earned per employé being $323.59; but in this industry, contrary to the one just cited, 54.66 per cent of all the persons employed were piece hands.

In connection with this subject, it may be interesting to note the average yearly earnings in certain industries for the year 1899 as shown in this Annual Report and in the reports for the States of Connecticut, New Jersey, and Pennsylvania for the same year. The averages for the other three States were obtained in a manner similar to that outlined for Massachusetts and combinations of detail have been made in order that the industry classifications might be as nearly as possible identical with those of this Commonwealth. The figures are brought together in the following table:

Industries.	Average Yearly Earnings — 1899			
	Massachusetts	Connecticut	New Jersey	Pennsylvania
Agricultural implements,	$485.63	-	$428.99	$490.71
Artisans' tools,	532.44	-	540.17	452.30
Awnings, sails, tents, etc.,	499.03	-	516.44	441.49
Boots and shoes,	469.73	$365.93	372.18	375.83

Industries.	Average Yearly Earnings — 1899			
	Massachusetts	Connecticut	New Jersey	Pennsylvania
Brick, tiles, and sewer pipe,	$421.52	–	$402.69	$418.55
Carpetings,	365.91	–	377.31	391.82
Carriages and wagons,	589.63	$601.83	548.96	–
Cement, kaolin, lime, and plaster,	470.63	–	497.60	–
Chemical preparations (compounded),	541.46	–	480.24	–
Clocks and watches,	519.59	–	467.95	–
Clothing,	365.78	366.01	378.94	346.84
Cooking, lighting, and heating apparatus,	618.92	–	474.14	533.90
Earthen, plaster, and stone ware,	480.35	–	560.43	433.43
Electrical apparatus and appliances,	538.15	–	539.12	551.08
Fertilizers,	501.15	–	483.65	–
Hosiery and knit goods,	313.84	332.81	262.59	268.34
Ink, mucilage, and paste,	445.93	–	502.27	–
Jewelry,	481.70	–	566.33	–
Leather,	467.09	–	471.91	414.94
Leather goods,	476.16	423.79	346.89	–
Liquors (malt),	795.22	–	805.34	–
Machines and machinery,	545.84	557.48	574.08	565.94
Metals and metallic goods,	505.66	452.40	475.13	455.93
Musical instruments and materials,	580.12	452.12	473.11	521.05
Oils and illuminating fluids,	536.69	–	588.87	–
Paper,	427.01	350.09	452.54	399.32
Printing, publishing, and bookbinding,	523.03	–	417.77	490.44
Railroad construction and equipment,	531.17	–	–	569.99
Rubber and elastic goods,	422.70	481.70	431.31	–
Saddlery and harness,	524.28	–	457.68	–
Scientific instruments and appliances,	439.82	–	413.14	–
Shipbuilding,	638.13	–	652.33	554.00
Silk and silk goods,	366.93	357.56	397.80	272.27
Textiles (cotton, woollen, and worsted),	342.85	313.76	324.78	350.63
Trunks and valises,	462.50	–	447.12	–
Wooden goods,	462.13	457.15	373.63	–

In the absence of returns for each individual in the State, actual wage conditions may be quite accurately ascertained by a comparison of the fluctuations in amounts paid weekly to adult male and female employés and to young persons without regard to sex. On pages 109 to 113 are presented, for the nine leading industries, the number of adult males and females and young persons receiving specified weekly wages. From considerations of space we have confined the presentation to certain industries, but the figures in detail for any industry may be obtained upon application to this Department.

The following table shows the percentages of adult males and females and of young persons in each wage class for All Industries:

Classification of Weekly Wages.	1899			1900		
	Percentages			Percentages		
	Males	Females	Young Persons	Males	Females	Young Persons
Under $5,	16.20	31.87	51.93	17.29	33.72	48.99
$5 but under $6,	23.47	43.14	33.39	23.92	43.48	32.60
$6 but under $7,	37.57	44.01	18.42	37.02	45.57	17.41
$7 but under $8,	53.12	37.63	9.25	54.54	36.84	8.62
$8 but under $9,	63 37	32.93	3.70	62.54	33.61	3.85
$9 but under $10,	78.75	19.25	2.00	76.13	21.98	1.89
$10 but under $12,	85.29	13.68	1.03	83.77	15.23	1.00
$12 but under $15,	93.05	6.67	0.28	92.99	6.69	0.32
$15 but under $20,	97.15	2.79	0.06	97.23	2.69	0.08
$20 and over,	98.80	1.16	0.04	98.58	1.40	0.02
Totals,	59.66	25.69	14.65	60.59	26.28	13.13

In each of these classes the percentages add across to 100. In the class including those paid under $5 per week, it will be noted that about one-half are persons under 21 years of age, about one-third are adult females, and about one-sixth are adult males. In the second class, about one-third are young persons, and in the third class, a little less than one-fifth are young persons. It will be seen from an examination of these percentages in connection with the total amount paid in wages that the employment of adult females or young persons affects in a considerable degree the average yearly earnings of all persons employed in any given industry. This is, perhaps, more clearly shown in the following table:

Classification of Weekly Wages.	Percentages							
	1899				1900			
	Males	Females	Young Persons	Totals	Males	Females	Young Persons	Totals
Under $5,	3.92	17.91	51.16	14.44	3.69	16.56	48.17	12.91
$5 but under $6,	3.87	16.51	22.41	9.83	3.77	15.79	23.69	9.54
$6 but under $7,	7.42	20.20	14.82	11.79	7.07	20.08	15.35	11.58
$7 but under $8,	9.60	15.80	6.81	10.78	9.77	15.22	7.12	10.86
$8 but under $9,	9.80	11.82	2.33	9.22	9.96	12.35	2.83	9.65
$9 but under $10,	13.91	7.90	1.44	10.54	14.16	9.42	1.63	11.27
$10 but under $12,	15.74	5.87	0.77	11.01	15.81	6.63	0.87	11.43
$12 but under $15,	17.81	2.96	0.22	11.42	17.68	2.93	0.28	11.52
$15 but under $20,	13.59	0.91	0.03	8.35	13.78	0.88	0.05	8.59
$20 and over,	4.34	0.12	0.01	2.62	4.31	0.14	0.01	2.65
Totals,	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

In this table, the percentages in each column add to 100, and it will be noted that about one-half of the young persons employed in both years received under $5 per week and that nearly nine-tenths of all the young persons are in the first three classes. For the purpose of analysis we have distributed, in the following table, the average number of persons employed in 1900, 380,941, into the several wage classes, based upon the percentages shown in the table on page 124, together with the estimated amount paid to adult males, adult females, and to young persons for one week of the year 1900:

Classification of Weekly Wages.	Number of—			Estimated Weekly Wages of—		
	Males	Females	Young Persons	Males	Females	Young Persons
Under $5,	8,503	16,583	24,093	$25,509	$49,749	$72,279
$5 but under $6,	8,693	15,802	11,847	47,812	86,911	65,159
$6 but under $7,	16,331	20,102	7,680	106,152	130,663	49,920
$7 but under $8,	22,563	15,241	3,566	169,223	114,308	26,745
$8 but under $9,	22,990	12,356	1,415	195,415	105,026	12,028
$9 but under $10,	32,684	9,437	811	310,498	89,652	7,705
$10 but under $12,	36,475	6,632	435	401,225	72,952	4,785
$12 but under $15,	40,808	2,936	140	550,908	39,636	1,890
$15 but under $20,	31,817	880	26	556,798	15,400	455
$20 and over,	9,952	141	2	223,920	3,173	45
Totals,	230,816	100,110	50,015	$2,587,460	$707,470	$241,011

Bearing in mind that the above figures are estimates only and are based upon the actual percentages shown in the table on page 124, we see that out of a total of $3,535,941 paid in wages during the week considered, $2,587,460, or 73.17 per cent, was paid to adult males; $707,470, or 20.01 per cent, to adult females; and $241,011, or 6.82 per cent, to the young persons of both sexes. If, in the same manner, we take the total amount paid out in wages during 1900, as shown on page 108, and distribute it in the same proportion among males, females, and young persons and divide the amounts thus obtained by the average number of persons employed, we secure the average yearly earnings for certain industries as follows:

Estimated Average Yearly Earnings.

Industries.	Males	Females	Young Persons
Boots and shoes,*	$546.21	$367.68	$230.54
Boots and shoes (factory product),	552.35	379.32	234.98
Carpetings,	495.53	349.29	203.46
Cotton goods (woven),	437.10	334.50	232.12
Cotton yarn and thread,	470.34	322.44	224.72
Leather,	493.14	340.13	258.19
Machines and machinery,	574.74	308.50	211.83
Metals and metallic goods,	564.39	287.78	230.41
Paper,	525.64	284.24	260.15
Woollen goods (woven goods and yarn),	463.31	355.02	233.06
Woollen goods (shoddy, waste, etc.),	483.48	290.25	219.86
Worsted goods,	479.04	338.06	238.54
All Industries,	$530.82	$334.70	$228.33

* Including Factory Product; Soles, Heels, and Cut Stock; Boot and Shoe Findings; and Stitching, Heeling, etc.

Comparing these average yearly earnings for adult males and females with those shown on pages 107 and 108 for all persons employed irrespective of sex or age, we find some marked variations. For example, in Boots and Shoes (in the aggregate) we find that the annual amount earned by each person, on an average (page 107) was $463.44. From the distribution of the persons employed into their respective classes, by sex, we find that 72.79 per cent of all the employés are males, 21.95 per cent are females, and 5.26 per cent young persons of both sexes. Distributing the total wages paid among these three classes in accordance with the proportions shown above and dividing by the estimated number of adult males, females, and young persons, we secure average yearly earnings as follows: $546.21 for adult males, $367.68 for adult females, and $230.54 for young persons without regard to sex. These averages are, undoubtedly, more nearly correct than those shown on pages 107 and 108 which, as has been stated, are averages obtained for all persons indiscriminately. In Boots and Shoes (Factory Product) 73.21 per cent of the persons employed are adult males, 21.93 per cent adult females, and 4.86 per cent minors; the average annual earnings in this industry on page 107 appear as $473.85, but under the process outlined above the average

obtained, as shown in the analysis table on page 126, is for adult males, $552.35; adult females, $379.32; and for young persons, $234.98. In the leather industry, the proportions are as follows: Adult males, 97.20 per cent; adult females, 0.57 per cent, and young persons, 2.23 per cent. The average yearly earnings for all persons in this industry are $482.12 while the earnings by sex and age are, adult males, $493.14; adult females, $340.13; and young persons, $258.19.

Considering All Industries, we find by reference to page 108 that the average yearly earnings for all persons employed without regard to sex or age was, in 1900, $439.57, while in the table of estimated yearly earnings the amount for males appears as $530.82, females, $334.70, and young persons, $228.33. Comparing these figures with those obtained under the same method in 1899, and taken from the report of that year, we secure the following comparison:

	1899	1900
Males,	$523.34	$530.82
Females,	324.72	334.70
Young persons,	219.34	228.33

Working Time and Proportion of Business Done.

On the following pages, we show the average number of days in operation and the average proportion of business done for the 4,645 establishments making return in each of the years 1899 and 1900.

The average number of days in operation is based upon the average number of persons employed, the number of days reported by each establishment being multiplied by the figures representing the average number of persons employed therein, and the sum of these multiplications for all the establishments divided by the aggregate average number of persons, an average for each industry and for All Industries being thus obtained. The actual number of working days exclusive of Sundays and holidays was 305 in 1899 and 306 in 1900.

The proportion of business done is based upon the greatest amount of goods which can be turned out in an establishment, presupposing a sufficient demand for goods, without increasing its present facilities. This greatest amount is considered as 100 per cent. If an establishment produced goods equivalent to three-quarters of its greatest capacity, the proportion of business done would be 75 per cent, while if only one-half of a possible output was reached it would be considered as 50 per cent. For example, in All Industries the average proportion of business done for the year 1900 is represented by 66.65 per cent; that is to say, it amounted to about two-thirds of what could have been done, had business conditions warranted, without enlarging the capacity of the manufacturing plants.

The several proportions returned by the establishments in each industry have been aggregated and the sum divided by the full number of establishments to obtain the average for each industry and for All Industries.

DAYS IN OPERATION AND PROPORTION OF BUSINESS DONE: BY INDUSTRIES.

1899, 1900.

[The figures given in the first two columns of this presentation represent the Average Number of Days in Operation, while in the last two columns the Average Proportion of Business Done is shown. The average number of days in operation is based upon the average number of persons employed, the number of days per establishment being multiplied by the figures representing the average number of persons, and the sum divided by the aggregate average number of persons, an average for each industry and for All Industries being thus obtained. As regards Average Proportion of Business Done, greatest capacity, or maximum production, has been considered as 100 per cent, and the percentages given indicate the average proportion of business done during each year on the basis stated.]

Industries.	Number of Establishments Considered	Average Number of Days in Operation		Average Proportion of Business Done	
		1899	1900	1899	1900
Agricultural implements,	9	289.21	292.66	60.33	57.89
Arms and ammunition,	13	295.11	290.87	67.69	75.15
Artisans' tools,	78	296.74	292.70	61.61	66.08
Awnings, sails, tents, etc.,	36	290.49	280.22	51.39	51.94
Bicycles, tricycles, etc.,	12	296.06	293.92	63.00	53.67
Boots and shoes,	673	291.24	284.55	66.89	64.04
Boots and shoes (factory product),	445	291.08	283.87	66.63	64.12
Soles, heels, and cut stock,	191	292.15	290.18	66.59	62.88
Boot and shoe findings,	24	293.63	295.73	74.17	75.75
Stitching, heeling, etc.,	13	297.80	294.34	66.46	56.92
Boxes, barrels, kegs, etc.,	114	287.46	286.94	67.67	69.83
Boxes (paper),	67	288.52	285.76	70.07	66.04
Brick, tiles, and sewer pipe,	64	217.65	223.48	60.63	62.54
Brooms, brushes, and mops,	23	295.66	297.74	69.43	66.39
Building materials,	47	296.00	297.75	62.77	60.87
Burial cases, caskets, coffins, etc.,	6	304.17	304.93	67.00	70.50
Buttons and dress trimmings,	15	298.19	288.17	63.00	60.67
Carpetings,	12	273.38	299.69	75.18	76.91
Carriages and wagons,	124	292.48	289.36	60.61	60.90
Cement, kaolin, lime, and plaster,	9	263.00	239.22	64.78	59.33
Chemical preparations (compounded),	12	292.11	298.54	54.58	52.08
Clocks and watches,	10	287.69	289.89	67.40	69.00
Clothing,	150	291.61	288.46	69.32	70.21
Cooking, lighting, and heating apparatus,	43	276.33	281.63	67.07	72.09
Cordage and twine,	21	293.64	298.01	73.52	73.57
Cotton goods,	162	301.98	298.98	90.78	91.37
Cotton goods (woven),	115	301.96	298.54	93.58	92.99
Cotton yarn and thread,	39	302.08	301.85	81.53	85.88
Cotton waste,	8	302.48	305.05	87.50	90.00
Crayons, pencils, crucibles, etc.,	4	281.95	266.70	85.00	85.00
Drugs and medicines,	21	299.99	298.33	59.67	56.48
Dyestuffs,	6	277.71	256.58	58.67	57.17
Earthen, plaster, and stone ware,	10	283.00	277.31	65.30	67.00
Electrical apparatus and appliances,	19	298.49	304.04	66.05	71.47
Electroplating,	12	273.81	271.76	66.50	66.67
Emery and sand paper and cloth, etc.,	9	298.96	299.60	75.11	78.44

DAYS IN OPERATION AND PROPORTION OF BUSINESS DONE: BY INDUSTRIES — 1899, 1900 — Concluded.

Industries.	Number of Establishments Considered	Average Number of Days in Operation		Average Proportion of Business Done	
		1899	1900	1899	1900
Fancy articles, etc.,	14	299.40	294.82	68.36	68.43
Fertilizers,	6	301.28	289.16	72.50	72.83
Fine arts and taxidermy,	3	304.42	305.22	75.00	73.33
Fireworks and matches,	3	275.46	287.11	65.00	73.33
Flax, hemp, and jute goods,	9	296.93	294.33	80.44	80.11
Food preparations,	341	298.41	291.69	61.81	62.96
Furniture,	129	296.32	295.11	66.69	66.92
Glass,	12	272.90	256.35	59.75	56.50
Glue, isinglass, and starch,	19	253.85	229.25	67.05	63.95
Hair work (animal and human),	4	273.11	197.34	67.50	65.50
Hose: rubber, linen, etc.,	5	283.84	301.13	65.80	70.00
Hosiery and knit goods,	34	299.81	302.46	67.76	71.65
Ink, mucilage, and paste,	7	303.61	296.18	57.57	55.14
Ivory, bone, shell, and horn goods, etc.,	23	286.81	289.03	75.52	76.00
Jewelry,	97	292.91	283.81	71.81	66.40
Leather,	90	297.61	296.60	70.14	63.09
Leather goods,	26	301.03	298.82	62.65	65.31
Liquors (bottled) and carbonated beverages,	29	299.24	292.67	53.45	57.34
Liquors (malt),	39	303.37	305.21	54.19	59.30
Liquors (distilled),	6	282.09	253.20	51.50	43.00
Lumber,	27	275.85	277.07	66.85	70.04
Machines and machinery,	358	300.18	292.28	66.49	69.24
Metals and metallic goods,	374	291.98	289.43	68.76	67.83
Models, lasts, and patterns,	46	294.96	284.61	57.48	54.15
Musical instruments and materials,	51	294.53	288.22	65.61	68.00
Oils and illuminating fluids,	10	302.05	294.60	67.70	59.20
Paints, colors, and crude chemicals,	29	294.73	281.77	59.38	62.69
Paper,	75	285.59	274.36	83.87	80.77
Paper goods,	40	299.01	299.55	74.13	74.13
Perfumes, toilet articles, etc.,	4	304.54	291.94	36.75	38.00
Photographs and photographic materials,	19	301.20	303.82	62.79	58.37
Polishes and dressing,	31	297.53	296.10	53.35	50.00
Printing, publishing, and bookbinding,	59	303.29	299.53	74.20	73.32
Print works, dye works, and bleacheries,	46	299.17	290.95	69.28	67.17
Railroad construction and equipment,	15	302.37	300.84	61.13	75.60
Rubber and elastic goods,	44	269.46	265.72	71.18	63.77
Saddlery and harness,	30	302.00	288.08	62.33	57.97
Scientific instruments and appliances,	21	297.96	299.61	63.00	72.95
Shipbuilding,	48	292.17	292.18	54.94	57.31
Silk and silk goods,	11	292.39	281.79	86.09	77.18
Sporting and athletic goods,	7	287.75	291.92	53.71	55.71
Stone,	197	268.08	278.88	55.51	55.82
Quarried,	47	250.01	272.61	50.12	50.67
Cut and monumental,	150	284.78	284.95	57.02	57.27
Straw and palm leaf goods,	19	279.24	252.42	65.89	67.05
Tallow, candles, soap, and grease,	56	298.30	299.08	64.36	65.39
Tobacco, snuff, and cigars,	74	295.14	290.34	59.30	61.43
Toys and games (children's),	11	293.72	284.06	62.00	68.82
Trunks and valises,	7	260.24	276.99	62.86	60.00
Whips, lashes, and stocks,	11	297.52	294.16	85.91	80.45
Wooden goods,	74	297.77	295.81	61.08	60.99
Woollen goods,	140	284.20	292.92	77.16	80.75
Woven goods and yarn,	116	284.71	293.49	78.52	83.03
Shoddy, waste, etc.,	24	270.44	276.34	70.63	69.79
Worsted goods,	34	297.52	274.31	82.00	77.50
All Industries,	4,645	294.15	290.43	66.82	66.65

Analysis.

The average number of days in operation for each of the 4,645 establishments in All Industries was 294.15 in 1899 and 290.43 in 1900, a decrease in the latter year of 3.72 days, or 1.26 per cent. The following table reproduces the figures for the nine leading industries:

Industries.	Number of Establishments Considered	Average Number of Days in Operation		Increase (+) or Decrease (—) in 1900	
		1899	1900	Days	Percentages
Boots and shoes,	673	291.24	284.55	—6.69	—2.30
Boots and shoes (factory product),	445	291.08	283.87	—7.21	—2.48
Soles, heels, and cut stock,	191	292.15	290.18	—1.97	—0.67
Boot and shoe findings,	24	293.63	295.73	+2.10	+0.72
Stitching, heeling, etc.,	13	297.80	294.34	—3.46	—1.16
Carpetings,	12	273.38	299.69	+26.31	+9.62
Cotton goods,	162	301.98	298.98	—3.00	—0.99
Cotton goods (woven),	115	301.96	298.54	—3.42	—1.13
Cotton yarn and thread,	39	302.08	301.85	—0.23	—0.08
Cotton waste,	8	302.48	305.05	+2.57	+0.85
Leather,	90	297.61	296.60	—1.01	—0.34
Machines and machinery,	358	300.18	292.28	—7.90	—2.63
Metals and metallic goods,	374	291.98	289.43	—2.55	—0.87
Paper,	75	285.59	274.36	—11.23	—3.93
Woollen goods,	140	284.20	292.92	+8.72	+3.07
Woven goods and yarn,	116	284.71	293.49	+8.78	+3.08
Shoddy, waste, etc.,	24	270.44	276.34	+5.90	+2.18
Worsted goods,	34	297.52	274.31	—23.21	—7.80
Nine industries,	1,918	295.67	291.34	—4.33	—1.46
Other industries,	2,727	291.29	288.71	—2.58	—0.89
All industries,	4,645	294.15	290.43	—3.72	—1.26

With the exceptions of Boot and Shoe Findings, Carpetings, Cotton Waste, Woollen Goods (Aggregate), Woollen Goods (Woven Goods and Yarn), and Woollen Goods (Shoddy, Waste, etc.), each of the nine leading industries shows a decrease in the average number of days in operation, ranging from 0.23 days in Cotton Yarn and Thread to 23.21 days in Worsted Goods. On the basis of the figures for 1900, all the establishments, on an average, were in operation 24.20 days in each month, and in the following industries the running time exceeded, on an average, 24.20 days per month:

Agricultural Implements.
Arms and Ammunition.
Artisans' Tools.
Bicycles, Tricycles, etc.
Boots and Shoes (Findings).
Boots and Shoes (Stitching, Heeling, etc.).
Brooms, Brushes, and Mops.
Building Materials.
Burial Cases, Caskets, Coffins, etc.
Carpetings.
Chemical Preparations (Compounded).
Cordage and Twine.
Cotton Goods (Woven).
Cotton Goods (Yarn and Thread).
Cotton Goods (Waste).
Drugs and Medicines.
Electrical Apparatus and Appliances.
Emery and Sand Paper and Cloth, etc.
Fancy Articles, etc.
Fine Arts and Taxidermy.
Flax, Hemp, and Jute Goods.
Food Preparations.
Furniture.
Hose: Rubber, Linen, etc.
Hosiery and Knit Goods.
Ink, Mucilage, and Paste.
Leather.
Leather Goods.
Liquors (Bottled) and Carbonated Beverages.
Liquors (Malt).
Machines and Machinery.
Oils and Illuminating Fluids.
Paper Goods.
Perfumes, Toilet Articles, etc.
Photographs and Photographic Materials.
Polishes and Dressing.
Printing, Publishing, and Bookbinding.
Print Works, Dye Works, and Bleacheries.
Railroad Construction and Equipment.
Scientific Instruments and Appliances.
Shipbuilding.
Sporting and Athletic Goods.
Tallow, Candles, Soap, and Grease.
Whips, Lashes, and Stocks.
Wooden Goods.
Woollen Goods (Woven Goods and Yarn).

The following industries exhibit an increase in the average number of days in operation in 1900 as compared with 1899:

Agricultural Implements.
Boots and Shoes (Findings).
Brick, Tiles, and Sewer Pipe.
Brooms, Brushes, and Mops.
Building Materials.
Burial Cases, Caskets, Coffins, etc.
Carpetings.
Chemical Preparations (Compounded).
Clocks and Watches.
Cooking, Lighting, and Heating Apparatus.
Cordage and Twine.
Cotton Goods (Waste).
Electrical Apparatus and Appliances.
Emery and Sand Paper and Cloth, etc.
Fine Arts and Taxidermy.
Fireworks and Matches.
Hose: Rubber, Linen, etc.
Hosiery and Knit Goods.
Ivory, Bone, Shell, and Horn Goods, etc.
Liquors (Malt).
Lumber.

Paper Goods.
Photographs and Photographic Materials.
Scientific Instruments and Appliances.
Shipbuilding.
Sporting and Athletic Goods.
Stone (Quarried).
Stone (Cut and Monumental).
Tallow, Candles, Soap, and Grease.
Trunks and Valises.
Woollen Goods (Woven Goods and Yarn).
Woollen Goods (Shoddy, Waste, etc.).

In the following industries, the establishments were in operation, on an average, less than nine months, or 229.50 days, in 1900: Brick, Tiles, and Sewer Pipe; Glue, Isinglass, and Starch; and Hair Work (Animal and Human).

The average proportion of business done for All Industries in 1899 was 66.82 per cent of total capacity (100 per cent), and in 1900 the proportion was 66.65 per cent, a slight decrease of 0.25 per cent being shown in the latter year. In no one industry was production carried on to full capacity, the nearest approach to it being found in Cotton Goods (Woven) wherein the establishments, on the average, ran 92.99 per cent of total capacity in 1900. Two industries, namely, Crayons, Pencils, Crucibles, etc., and Paper Goods, exhibit no change in average proportion of business done. In two industries, namely, Liquors (Distilled) and Perfumes, Toilet Articles, etc., proportion did not reach 50 per cent in 1900; and in one industry, Polishes and Dressing, the average proportion of business done was one-half of the full capacity of the several plants.

Production equalled, on an average, three-quarters of greatest capacity (75 per cent or over) in the following industries in 1900:

Arms and Ammunition.
Boots and Shoes (Findings).
Carpetings.
Cotton Goods (Woven).
Cotton Goods (Yarn and Thread).
Cotton Goods (Waste).
Crayons, Pencils, Crucibles, etc.
Emery and Sand Paper and Cloth, etc.
Flax, Hemp, and Jute Goods.
Ivory, Bone, Shell, and Horn Goods, etc.
Paper.
Railroad Construction and Equipment.
Silk and Silk Goods.
Whips, Lashes, and Stocks.
Woollen Goods (Woven Goods and Yarn).
Worsted Goods.

The following industries exhibit an increase in average proportion of business done in 1900 as compared with 1899:

Arms and Ammunition.
Artisans' Tools.
Awnings, Sails, Tents, etc.
Boots and Shoes (Findings).
Boxes, Barrels, Kegs, etc.
Brick, Tiles, and Sewer Pipe.
Burial Cases, Caskets, Coffins, etc.
Carpetings.
Carriages and Wagons.
Clocks and Watches.
Clothing.
Cooking, Lighting, and Heating Apparatus.
Cordage and Twine.
Cotton Goods (Yarn and Thread).
Cotton Goods (Waste).
Earthen, Plaster, and Stone Ware.
Electrical Apparatus and Appliances.
Electroplating.
Emery and Sand Paper and Cloth, etc.
Fancy Articles, etc.
Fertilizers.
Fireworks and Matches.
Food Preparations.
Furniture.
Hose: Rubber, Linen, etc.
Hosiery and Knit Goods.
Ivory, Bone, Shell, and Horn Goods, etc.
Leather Goods.
Liquors (Bottled) and Carbonated Beverages.
Liquors (Malt).
Lumber.
Machines and Machinery.
Musical Instruments and Materials.
Paints, Colors, and Crude Chemicals.
Perfumes, Toilet Articles, etc.
Railroad Construction and Equipment.
Scientific Instruments and Appliances.
Shipbuilding.
Sporting and Athletic Goods.
Stone (Quarried).
Stone (Cut and Monumental).
Straw and Palm Leaf Goods.
Tallow, Candles, Soap, and Grease.
Tobacco, Snuff, and Cigars.
Toys and Games (Children's).
Woollen Goods (Woven Goods and Yarn).

In the following table, we bring forward from the presentation on pages 129 and 130 the figures for the nine leading industries with the increase or decrease in 1900 as compared with 1899:

Industries.	Number of Establishments Considered	Average Proportion of Business Done		Increase (+) or Decrease (—) in 1900	
		1899	1900	Proportion	Percentages
Boots and shoes,	673	66.89	64.04	—2.85	—4.26
Boots and shoes (factory product),	445	66.63	64.12	—2.51	—3.77
Soles, heels, and cut stock,	191	66.59	62.88	—3.71	—5.57
Boot and shoe findings,	24	74.17	75.75	+1.58	+2.13
Stitching, heeling, etc.,	13	66.46	56.92	—9.54	—14.35

Industries.	Number of Establishments Considered	Average Proportion of Business Done		Increase (+) or Decrease (—) in 1900	
		1899	1900	Proportion	Percentages
Carpetings,	12	75.18	76.91	+1.73	+2.30
Cotton goods,	162	90.78	91.37	+0.59	+0.65
Cotton goods (woven),	115	93.58	92.99	—0.59	—0.63
Cotton yarn and thread,	39	81.53	85.88	+4.35	+5.34
Cotton waste,	8	87.50	90.00	+2.50	+2.86
Leather,	90	70.14	63.09	—7.05	—10.05
Machines and machinery,	358	66.49	69.24	+2.75	+4.14
Metals and metallic goods,	374	68.76	67.83	—0.93	—1.35
Paper,	75	83.87	80.77	—3.10	—3.70
Woollen goods,	140	77.16	80.75	+3.59	+4.65
Woven goods and yarn,	116	78.52	83.03	+4.51	+5.74
Shoddy, waste, etc.,	24	70.63	69.79	—0.84	—1.19
Worsted goods,	34	82.00	77.50	—4.50	—5.49
Nine industries,	1,918	70.99	70.10	—0.89	—1.25
Other industries,	2,727	63.90	64.23	+0.33	+0.52
All industries,	4,645	66.82	66.65	—0.17	—0.25

Of the nine leading industries, Cotton Goods is the only one which, in 1900, approached full capacity, the average proportion of business done being 91.37 per cent. The three subdivisions of this industry exhibit proportions ranging between 85.88 per cent and 92.99 per cent. Paper follows, the average proportion being 80.77, and is in turn followed by Woollen Goods, in which the average is 80.75. The subdivisions of this industry show marked variation, however, Woven Goods and Yarn exceeding the average proportion shown for the total by 2.28 per cent, and Shoddy, Waste, etc., exhibiting an average proportion less than the total by 10.96 per cent. The lowest average proportion of business done in 1900 is found in Boots and Shoes (Stitching, Heeling, etc.), the percentage being 56.92. In no other instance does production fall below six-tenths of the possible output in so far as concerns the nine leading industries.

General Summary of Industrial Conditions.

In the following table, we bring together the leading facts concerning All Industries, drawn from the several presentations for 1899 and 1900 and from the analysis:

Classification.	1899	1900	Increase (+) or Decrease (−) in 1900	
			Amounts	Percentages
Number of establishments considered,	4,645	4,645	-	-
Number of private firms,	3,352	3,286	−66	−1.97
Number of corporations,	1,150	1,199	+49	+4.26
Number of industrial combinations,	22	22	-	-
Number of partners,	5,269	5,116	−153	−2.90
Males,	5,012	4,852	−160	−3.19
Females,	146	159	+13	+8.90
Special and estates,	111	105	−6	−5.41
Number of stockholders,	45,506	47,211	+1,705	+3.75
Males,	25,330	26,443	+1,113	+4.39
Females,	14,940	15,595	+655	+4.38
Banks, trustees, etc.,	5,236	5,173	−63	−1.20
Average partners to a private firm,	1.57	1.56	−0.01	−0.64
Average stockholders to a corporation,	39.57	39.38	−0.19	−0.48
Amount of capital invested,	$448,709,260	$456,685,248	+$7,975,988	+1.78
Value of stock used,	$419,301,108	$455,224,455	+$35,923,347	+8.57
Value of goods made and work done,	$736,695,225	$799,353,677	+$62,658,452	+8.51
Persons employed:				
Average number,	367,118	380,941	+13,823	+3.77
Males,	242,999	254,397	+11,398	+4.69
Females,	124,119	126,544	+2,425	+1.95
Smallest number,	312,054	317,757	+5,703	+1.83
Greatest number,	420,701	434,802	+14,101	+3.35
Excess of greatest over smallest,	108,647	117,045	+8,398	+7.73
Total amount paid in wages,	$156,979,841	$167,449,273	+$10,469,432	+6.67
Average yearly earnings (without regard to sex or age),	$427.60	$439.57	+$11.97	+2.80
Males,*	$523.34	$530.82	+$7.48	+1.43
Females,*	$324.72	$334.70	+$9.98	+3.07
Young persons,*	$219.34	$228.33	+$8.99	+4.09
Average proportion of business done,	66.82	66.65	−0.17	−0.25
Average number of days in operation,	294.15	290.43	−3.72	−1.26

* Estimated.

As we have pointed out in previous reports, it is possible to reflect the actual conditions of the industries of the State from

the returns made to this Department by representative establishments in each year. From the preceding table, it is seen that the value of goods made and work done in 1900 shows an increase over 1899 of 8.51 per cent. This percentage is based upon the returns made by 4,645 establishments and in the absence of more complete information may be accepted as being applicable to the State as a whole. In the following table, we show for the nine leading industries and for All Industries the value of product for the Census year 1895 and the estimated product for 1898, 1899, and 1900.

Industries.	Value of Goods Made and Work Done			
	1895	1898	1899	1900
All Industries.	$849,807,302	$865,619,185	$1,000,569,216	$1,085,717,656
Boots and shoes,	122,135,081	131,162,578	150,259,849	152,333,435
Carpetings,	7,447,115	5,932,370	7,299,188	7,939,327
Cotton goods,	93,615,560	90,986,069	100,958,142	127,964,445
Leather,	*25,694,407	23,161,557	28,632,317	26,516,389
Machines and machinery,	33,492,848	34,797,770	46,548,977	59,196,334
Metals and metallic goods,	40,297,899	40,426,780	51,447,120	53,983,463
Paper,	†27,955,024	22,212,585	23,731,926	24,818,848
Woollen goods,	29,370,963	30,359,533	33,331,731	39,474,769
Worsted goods,	20,975,996	25,664,722	32,540,301	30,594,391

* Includes Leather Goods. † Includes Paper Goods.

The values shown in the first column of the above table are taken from the Census report of 1895 and cover the output of all the establishments engaged in manufacturing and mechanical industries in that year. For 1898, 1899, and 1900, the figures are estimates based upon the percentages of increase or decrease as shown by these annual reports, which, as has been stated, are derived from a considerable number of representative establishments making returns in each of the years 1895 to 1900, inclusive. In other words, had a complete Census been taken on December 31, 1900, the aggregate value of goods made and work done in all the establishments would have approximated $1,085,717,656, and the value of the product in each of the nine leading industries would have approximated the figures given in the last column of the table.

In the next table, we present the estimated value of goods

made and work done in 1900 in the various industries of the State based, also, upon the percentages of increase or decrease since 1895 as derived from the establishments making return for these annual reports.

Industries.	Value of Goods Made and Work Done	
	1899	1900
Agricultural implements,	$1,253,206	$1,344,063
Arms and ammunition,	2,833,380	3,095,184
Artisans' tools,	4,191,979	4,779,694
Awnings, sails, tents, etc.,	603,765	608,776
Bicycles, tricycles, etc.,	3,249,519	2,421,867
Boots and shoes,	150,259,849	152,333,435
Boxes, barrels, kegs, etc.,	4,754,558	5,326,531
Boxes (paper),	2,371,416	2,396,316
Brick, tiles, and sewer pipe,	1,599,550	1,759,665
Brooms, brushes, and mops,	1,691,331	1,893,614
Building materials,	2,340,565	2,493,872
Burial cases, caskets, coffins, etc.,	394,867	430,050
Buttons and dress trimmings,	13,677,499	13,186,477
Carpetings,	7,299,188	7,939,327
Carriages and wagons,	11,687,800	12,252,321
Cement, kaolin, lime, and plaster,	345,962	347,761
Chemical preparations (compounded),	1,749,684	2,213,700
Clocks and watches,	2,327,541	3,451,278
Clothing,	39,447,380	43,190,936
Cooking, lighting, and heating apparatus,	4,592,389	4,668,623
Cordage and twine,	8,960,041	10,769,969
Cotton goods,	100,958,142	127,964,445
Crayons, pencils, crucibles, etc.,	176,388	185,013
Drugs and medicines,	8,635,784	9,015,758
Dyestuffs,	880,667	654,159
Earthen, plaster, and stone ware,	213,821	200,436
Electrical apparatus and appliances,	9,866,957	12,324,816
Electroplating,	401,691	421,012
Emery and sand paper and cloth, etc.,	1,535,180	1,521,977
Fancy articles, etc.,	909,558	978,957
Fertilizers,	1,881,646	1,518,865
Fine arts and taxidermy,	64,237	76,583
Fireworks and matches,	143,989	154,313
Flax, hemp, and jute goods,	3,608,838	4,246,520
Food preparations,	100,024,141	102,284,687
Furniture,	14,509,483	14,731,478
Glass,	466,342	433,325
Glue, isinglass, and starch,	1,413,264	1,436,442
Hair work (animal and human),	573,403	484,067
Hose: rubber, linen, etc.,	1,017,487	1,262,498
Hosiery and knit goods,	5,924,407	7,196,377
Ink, mucilage, and paste,	741,479	756,383
Ivory, bone, shell, and horn goods, etc.,	2,083,945	2,250,035
Jewelry,	11,543,429	11,720,043

Industries.	Value of Goods Made and Work Done	
	1899	1900
Leather,	$28,632,317	$26,516,389
Leather goods,	4,045,960	4,196,065
Liquors (bottled) and carbonated beverages,	954,453	958,366
Liquors (malt),	13,517,444	14,446,092
Liquors (distilled),	1,495,830	1,533,375
Lumber,	5,932,916	6,015,977
Machines and machinery,	46,548,977	59,196,334
Metals and metallic goods,	51,447,120	53,983,463
Models, lasts, and patterns,	1,218,589	1,179,960
Musical instruments and materials,	7,400,626	8,149,569
Oils and illuminating fluids,	1,561,210	1,434,284
Paints, colors, and crude chemicals,	1,477,745	1,502,719
Paper,	23,731,926	24,818,848
Paper goods,	6,499,265	7,246,680
Perfumes, toilet articles, etc.,	225,868	230,566
Photographs and photographic materials,	2,114,217	2,094,132
Polishes and dressing,	2,447,751	3,081,963
Printing, publishing, and bookbinding,	29,401,941	30,616,241
Print works, dye works, and bleacheries,	27,509,367	29,506,547
Railroad construction and equipment,	6,823,849	7,070,872
Rubber and elastic goods,	25,940,548	24,879,580
Saddlery and harness,	2,408,456	2,487,453
Scientific instruments and appliances,	2,789,323	3,244,262
Shipbuilding,	2,397,879	3,083,912
Silk and silk goods,	6,174,366	5,639,048
Sporting and athletic goods,	706,842	862,135
Stone,	6,332,181	6,418,932
Straw and palm leaf goods,	5,356,980	5,354,837
Tallow, candles, soap, and grease,	4,071,066	4,542,903
Tobacco, snuff, and cigars,	4,873,242	5,314,758
Toys and games (children's),	991,611	1,088,392
Trunks and valises,	194,278	192,549
Whips, lashes, and stocks,	1,463,427	1,514,208
Wooden goods,	9,587,231	10,613,065
Woollen goods,	33,331,731	39,474,769
Worsted goods,	32,540,301	30,594,391

In the following table is shown the increase (+), decrease (—), or no change (=) in 1900 as compared with 1899 in amount of capital invested, value of product, average number of persons employed, total amount of wages paid, average number of days in operation, and average proportion of business done:

Industries.	Increase (+), Decrease (−), or No Change (=) in 1900 as Compared with 1899 in—					
	Capital	Product	Persons	Wages	Days	Proportion
Agricultural implements,	−	+	+	+	+	−
Arms and ammunition,	+	+	+	+	−	+
Artisans' tools,	+	+	+	+	−	+
Awnings, sails, tents, etc.,	+	+	−	+	−	+
Bicycles, tricycles, etc.,	+	−	−	−	−	−
Boots and shoes,	−	+	+	−	−	−
Boots and shoes (factory product),	−	+	+	−	−	−
Soles, heels, and cut stock,	−	−	−	−	−	−
Boot and shoe findings,	+	+	+	+	+	+
Stitching, heeling, etc.,	+	−	−	−	−	−
Boxes, barrels, kegs, etc.,	+	+	+	+	−	+
Boxes (paper),	+	+	+	+	−	−
Brick, tiles, and sewer pipe,	+	+	+	+	+	+
Brooms, brushes, and mops,	+	+	+	+	+	−
Building materials,	+	+	+	+	+	−
Burial cases, caskets, coffins, etc.,	+	+	+	+	+	+
Buttons and dress trimmings,	+	−	−	−	−	−
Carpetings,	−	+	+	+	+	+
Carriages and wagons,	+	+	−	+	−	+
Cement, kaolin, lime, and plaster,	−	+	−	−	−	−
Chemical preparations (compounded),	+	+	+	+	+	−
Clocks and watches,	+	+	+	+	+	+
Clothing,	+	+	+	+	−	+
Cooking, lighting, and heating apparatus,	−	+	+	−	+	+
Cordage and twine,	+	+	+	+	+	+
Cotton goods,	+	+	+	+	−	+
Cotton goods (woven),	+	+	+	+	−	−
Cotton yarn and thread,	+	+	+	+	−	+
Cotton waste,	−	+	+	+	+	+
Crayons, pencils, crucibles, etc.,	−	+	+	+	−	=
Drugs and medicines,	+	+	−	+	−	−
Dyestuffs,	−	−	−	−	−	−
Earthen, plaster, and stone ware,	+	−	−	−	−	+
Electrical apparatus and appliances,	+	+	+	+	+	+
Electroplating,	−	+	+	+	−	+
Emery and sand paper and cloth, etc.,	+	−	+	+	+	+
Fancy articles, etc.,	+	+	+	+	−	+
Fertilizers,	+	−	−	+	−	+
Fine arts and taxidermy,	+	+	+	+	+	−
Fireworks and matches,	+	+	+	+	+	+
Flax, hemp, and jute goods,	−	+	+	+	−	−
Food preparations,	−	+	+	−	−	+
Furniture,	+	+	−	+	−	+
Glass,	−	−	−	−	−	−
Glue, isinglass, and starch,	−	+	−	−	−	−
Hair work (animal and human),	+	−	−	−	−	−
Hose: rubber, linen, etc.,	+	+	+	+	+	+
Hosiery and knit goods,	+	+	+	+	+	+

Industries.	Increase (+), Decrease (−), or No Change (=) in 1900 as Compared with 1899 in —					
	Capital	Product	Persons	Wages	Days	Proportion
Ink, mucilage, and paste,	+	+	−	−	−	−
Ivory, bone, shell, and horn goods, etc.,	+	+	+	+	+	+
Jewelry,	−	+	+	+	−	−
Leather,	+	−	−	+	−	−
Leather goods,	+	+	+	+	−	+
Liquors (bottled) and carbonated beverages,	+	+	+	+	−	+
Liquors (malt),	+	+	−	−	+	+
Liquors (distilled),	+	+	+	+	−	−
Lumber,	−	+	+	+	+	+
Machines and machinery,	+	+	+	+	−	+
Metals and metallic goods,	+	+	+	+	−	−
Models, lasts, and patterns,	+	−	−	−	−	−
Musical instruments and materials,	+	+	+	+	−	+
Oils and illuminating fluids,	-	−	−	−	−	−
Paints, colors, and crude chemicals,	+	+	+	+	−	+
Paper,	−	+	−	−	−	−
Paper goods,	+	+	+	+	+	=
Perfumes, toilet articles, etc.,	+	+	+	+	−	+
Photographs and photographic materials,	+	−	+	+	+	−
Polishes and dressing,	+	+	+	+	−	−
Printing, publishing, and bookbinding,	+	+	+	+	−	−
Print works, dye works, and bleacheries,	+	+	+	+	−	−
Railroad construction and equipment,	−	+	+	+	−	+
Rubber and elastic goods,	−	−	−	−	−	−
Saddlery and harness,	−	+	+	+	−	−
Scientific instruments and appliances,	+	+	+	+	+	+
Shipbuilding,	+	+	+	+	+	+
Silk and silk goods,	−	−	−	−	−	−
Sporting and athletic goods,	−	+	+	+	+	+
Stone,	+	+	−	+	+	+
Quarried,	+	+	+	+	+	+
Cut and monumental,	+	+	−	+	+	+
Straw and palm leaf goods,	+	−	+	+	−	+
Tallow, candles, soap, and grease,	+	+	+	+	+	+
Tobacco, snuff, and cigars,	+	+	+	+	−	+
Toys and games (children's),	+	+	+	+	−	+
Trunks and valises,	−	−	=	+	+	−
Whips, lashes, and stocks,	−	+	−	+	−	−
Wooden goods,	−	+	+	+	−	−
Woollen goods,	−	+	+	+	+	+
Woven goods and yarn,	−	+	+	+	+	+
Shoddy, waste, etc.,	+	+	+	+	+	−
Worsted goods,	−	−	−	−	−	−
All Industries,	+	+	+	+	−	−

All Industries, in the aggregate, shows an increase in each of the elements considered except average number of days in operation and average proportion of business done. The same is true for the following seven industries:

Boxes (Paper).
Cotton Goods (Woven).
Liquors (Distilled).
Metals and Metallic Goods.
Polishes and Dressing.
Printing, Publishing, and Bookbinding.
Print Works, Dye Works, and Bleacheries.

The following 14 industries exhibit an increase in each of the elements considered:

Boots and Shoes (Findings).
Brick, Tiles, and Sewer Pipe.
Burial Cases, Caskets, Coffins, etc.
Clocks and Watches.
Cordage and Twine.
Electrical Apparatus and Appliances.
Fireworks and Matches.
Hose: Rubber, Linen, etc.
Hosiery and Knit Goods.
Ivory, Bone, Shell, and Horn Goods, etc.
Scientific Instruments and Appliances.
Shipbuilding.
Stone (Quarried).
Tallow, Candles, Soap, and Grease.

The following industries exhibit decreases in each of the elements considered:

Boots and Shoes (Soles, Heels, and Cut Stock).
Dyestuffs.
Glass.
Oils and Illuminating Fluids.
Rubber and Elastic Goods.
Silk and Silk Goods.
Worsted Goods.

In the following table, data relative to establishments controlled by private firms, by corporations, and by industrial combinations for the year 1900 are shown:

Classification.	Private Firms	Corporations	Industrial Combinations
Number of establishments,	3,301	1,260	84
Aggregate capital invested,	$95,850,027	$317,234,910	$43,600,311
Average capital per establishment,	$29,037	$251,774	$519,051
Value of goods made and work done,	$247,118,611	$481,665,384	$70,569,682
Average product per establishment,	$74,862	$382,274	$840,115

Classification.	Private Firms	Corporations	Industrial Combinations
Number of persons employed:			
Average number,	112,013	245,990	22,938
Smallest number,	89,214	212,267	16,276
Greatest number,	136,099	271,760	26,943
Average number per establishment,	34	195	273
Total amount paid in wages,	$52,513,347	$105,716,332	$9,219,594
Average paid per establishment,	$15,908	$83,902	$109,757
Average yearly earnings,	$468.81	$429.76	$401.94

From the above table it is seen that in the 3,301 establishments managed by the private firms there was invested as capital necessary for the production of goods, the sum of $95,850,027, or, on an average, $29,037 per establishment. In the 1,260 establishments controlled by corporations, the capital invested was $317,234,910, or an average of $251,774 per establishment. In the 84 establishments under the direction of industrial combinations, the aggregate capital was $43,600,311, or an average of $519,051 per establishment.

The value of goods made and work done by the private firms was $247,118,611; by corporations, $481,665,384; and by industrial combinations, $70,569,682. The averages per establishment were, for private firms, $74,862; corporations, $382,274; and industrial combinations, $840,115.

The average number of persons employed in the establishments controlled by private firms was 112,013, or 34 persons per establishment, on an average; by corporations, 245,990, or 195 persons per establishment; and by industrial combinations, 22,938, or 273 persons per establishment.

The total amount disbursed as wages in establishments managed by private firms was $52,513,347, or $15,908 per establishment, making the average annual earnings for each man, woman, and young person, $468.81. In the establishments controlled by corporations the amount paid in wages was $105,716,332, an average of $83,902 per establishment, and an average for each person, irrespective of sex or age, of $429.76. In the establishments controlled by industrial com-

binations $9,219,594 was paid in wages, an average per establishment of $109,757, and an average yearly earning per individual of $401.94. In other words, the private firms have 20.99 per cent of the capital invested, produce 30.91 per cent of the value of the product, employ 29.40 per cent of the average number of persons, and pay 31.36 per cent of the wages paid in all the establishments considered. The corporations have invested 69.46 per cent of the total capital, manufacture 60.26 per cent of the product, employ 64.58 per cent of the total average number of persons employed, and pay 63.13 per cent of the aggregate amount paid in wages. The industrial combinations have 9.55 per cent of the aggregate capital invested, turn out 8.83 per cent of the total value of goods made, employ 6.02 per cent of the total average number of persons employed, and pay to them 5.51 per cent of the total amount paid out in wages.

For purposes of comparison, we present in the following table data relative to industrial combinations in 1899 and 1900:

Classification.	1899	1900	Increase (+) or Decrease (−) in 1900	
			Amounts	Percentages
Number of establishments,	84	84	-	-
Aggregate capital invested,	$45,648,374	$43,600,311	−$2,048,063	−4.49
Average capital per combination,	$2,074,926	$1,981,832	−$93,094	−4.49
Value of goods made and work done,	$62,753,784	$70,569,682	+$7,815,898	+12.45
Average product per combination,	$2,852,445	$3,207,713	+$355,268	+12.45
Average number of persons employed,	23,442	22,938	−504	−2.15
Total amount paid in wages,	$9,200,866	$9,219,594	+$18,728	+0.20
Average yearly earnings,	$392.49	$401.94	+$9.45	+2.41

The 84 establishments considered above were controlled by 22 industrial combinations and had a capital invested in 1899 of $45,648,374, falling in 1900 to $43,600,311, a decrease of 4.49 per cent. The average capital per combination was $2,074,926 in 1899 and $1,981,832 in 1900, a corresponding decrease (4.49 per cent) in the latter year. The value of goods made and work done shows an increase of 12.45 per cent in 1900 as compared with 1899; the average number of persons employed, a decrease of 2.15 per cent accompanied by a slight increase of 0.20 per cent in total amount paid in

wages, and an increase of 2.41 per cent in the average amount earned annually by each employé.

The following table exhibits the industry product for the nine leading industries, as distinguished from the normal value of goods made and work done, together with the "Profit and Minor Expense Fund."

Industries.	Value of Goods Made	Value of Stock Used	Industry Product	Paid in Wages	Profit and Minor Expense Fund
Boots and shoes,	$129,189,130	$80,966,554	$48,222,576	$27,476,207	$20,746,369
Carpetings,	7,762,492	4,744,696	3,017,796	1,722,180	1,295,616
Cotton goods,	125,494,899	66,162,140	59,332,759	33,453,372	25,879,387
Leather,	18,381,491	13,905,787	4,475,704	2,327,200	2,148,504
Machines and machinery,	50,833,138	18,673,352	32,159,786	16,416,828	15,742,958
Metals and metallic goods,	29,746,722	15,297,738	14,448,984	7,755,689	6,693,295
Paper,	21,491,529	12,486,281	9,005,248	3,778,900	5,226,348
Woollen goods,	38,001,317	21,898,179	16,103,138	8,004,814	8,098,324
Worsted goods,	32,173,495	19,377,717	12,795,778	5,459,841	7,335,937

In the above table, the value of goods made and the value of stock and materials used are shown in the first two columns. The industry product is given in the third column and is obtained by subtracting from the value of goods made and work done the value of stock used. The fifth column of the table shows the profit and minor expense fund, which is obtained by subtracting from the industry product the amount paid out in wages. Industry product represents the actual result of the productive forces in the industry, that is, the added value created above the value of stock and materials consumed by the union of labor and capital. In the division of the proceeds of each industry, one part of this industry product is paid to the labor force in the form of wages, this being labor's direct share of the product. The balance constitutes a fund from which are paid freights, insurance, interest on loans (credit capital), interest on stock (fixed or invested capital), rents, commissions, salaries, etc.; in fact, all expenses other than those for stock and wages. The remainder, if any, is the profit of the employer. The entire balance of the industry product remaining after the deduction of the amount paid in wages, becomes a "Profit and Minor Expense Fund," and is thus designated in the table. Of course, it will be understood that the term "Minor Expense" is relative. The

expenses, some of which we have enumerated, paid out of this balance, are in themselves considerable in amount, and are only to be classed as "Minor" in comparison with the generally larger amounts expended for materials (stock) and wages.

The next table presents the actual product per $1,000 of capital invested in each of the nine leading industries, with the average product per employé, the percentage of industry product paid in wages, and the percentage devoted to other expenses for the year 1900.

Industries.	Capital Invested	Average Persons Employed	Industry Product		Percentages of Industry Product	
			Per $1,000 of Capital	Average per Employé	Devoted to Profit and Minor Expenses	Paid in Wages
Boots and shoes,	$26,716,110	59,288	$1,805.00	$813.36	43.02	56.98
Carpetings,	6,546,465	4,609	460.98	654.76	42.93	57.07
Cotton goods,	129,544,848	92,625	458.01	640.57	43.62	56.38
Leather,	6,143,081	4,827	728.58	927.22	48.00	52.00
Machines and machinery,	40,813,722	29,623	787.97	1,085.64	48.95	51.05
Metals and metallic goods,	17,676,413	15,155	817.42	953.41	46.32	53.68
Paper,	20,218,471	8,906	445.40	1,011.14	58.04	41.96
Woollen goods,	24,673,165	19,912	652.66	808.72	50.29	49.71
Worsted goods,	15,829,430	14,534	808.35	880.40	57.33	42.67

The efficiency of the capital invested in these industries during 1900 is shown in the third column of the table, the largest product per $1,000 of capital invested being found in Boots and Shoes, namely, $1,805. No other industry approaches this figure; the nearest to it, however, is Metals and Metallic Goods, the industry product per $1,000 of invested capital being $817.42. The lowest industry product is found in Paper, $445.40 for each $1,000 of capital invested. The fourth column of the table shows the efficiency of labor. With respect to this point, the industries Machines and Machinery and Paper head the list, the average industry products per employé being $1,085.64 and $1,011.14, respectively. The lowest industry product per employé is found in Cotton Goods, the average being $640.57.

When the percentage of industry product paid in wages is considered, we find that Carpetings leads, the percentage being 57.07. Next ranks Boots and Shoes, the percentage being 56.98, followed in turn by Cotton Goods, Metals and

Metallic Goods, Leather, Machines and Machinery, Woollen Goods, Worsted Goods, and Paper. The percentages of industry product paid in wages are the complements of the percentages of industry product devoted to profit and minor expenses, these two items aggregating 100 per cent, or the whole of the industry product.

Below we compare the rank of the different industries in 1900 as regards the amount of industry product per $1,000 of capital, with the rank of the same industries for 1899 as derived from the report on Annual Statistics of Manufactures for that year.

1899.	1900.
Boots and Shoes.	Boots and Shoes.
Leather.	Metals and Metallic Goods.
Metals and Metallic Goods.	Worsted Goods.
Worsted Goods.	Machines and Machinery.
Machines and Machinery.	Leather.
Woollen Goods.	Woollen Goods.
Carpetings.	Carpetings.
Paper.	Cotton Goods.
Cotton Goods.	Paper.

In the above comparison Boots and Shoes, Woollen Goods, and Carpetings retain in 1900 the rank held in 1899. Leather falls from second place to fifth in 1900, advancing Metals and Metallic Goods, Worsted Goods, and Machines and Machinery from third to second, fourth to third, and fifth to fourth place, respectively. Cotton Goods rises from ninth to eighth place, changing position with Paper.

With respect to the average industry product per employé, the rank of the industries in each of the years appears as follows:

1899.	1900.
Machines and Machinery.	Machines and Machinery.
Paper.	Paper.
Metals and Metallic Goods.	Metals and Metallic Goods.
Leather.	Leather.
Worsted Goods.	Worsted Goods.
Boots and Shoes.	Boots and Shoes.
Woollen Goods.	Woollen Goods.
Carpetings.	Carpetings.
Cotton Goods.	Cotton Goods.

No change occurs in any of the above industries. Each retains the same rank in 1900 which it held in 1899.

The next comparison relates to the percentage of industry product paid in wages, the industries ranking as follows:

1899.	1900.
Cotton Goods.	Carpetings.
Boots and Shoes.	Boots and Shoes.
Carpetings.	Cotton Goods.
Metals and Metallic Goods.	Metals and Metallic Goods.
Machines and Machinery.	Leather.
Leather.	Machines and Machinery.
Woollen Goods.	Woollen Goods.
Worsted Goods.	Worsted Goods.
Paper.	Paper.

Carpetings rose from third to first place in 1900 and Cotton Goods fell from first to third. Leather and Machines and Machinery changed places, the former holding the fifth place in 1900 as against sixth in 1899. All of the other industries held the same rank in both years.

In this connection, we present a series of separate tables for the nine leading industries for 1899 and 1900, bringing forward for that purpose data contained in the tables on pages 145 and 146.

The first relates to Boots and Shoes.

Boots and Shoes. [Comparison for 673 Establishments.]

Classification.	1899	1900
Amount of capital invested,	$27,182,381	$26,716,110
Value of goods made and work done (gross product),	$127,427,884	$129,189,130
Value of stock used and other materials consumed in production,	$80,829,679	$80,966,554
Industry product (gross product less value of stock and materials),	$46,598,205	$48,222,576
Wages (labor's direct share of product),	$27,648,530	$27,476,207
Profit and minor expense fund (industry product less wages),	$18,949,675	$20,746,369
Percentage of industry product paid in wages,	59.33	56.98
Percentage of industry product devoted to profit and minor expenses,	40.67	43.02
Percentage of profit and minor expense fund of capital invested,	69.71	77.65

The percentages of industry product paid in wages in 1899 and 1900 were 59.33 and 56.98, respectively, a decrease in

the last named year. The percentage of industry product devoted to profit and minor expenses shows an increase, being 40.67 in 1899 and 43.02 in 1900. The percentage which this profit and minor expense fund formed of capital invested was 69.71 in 1899, rising to 77.65 in 1900; that is to say, a smaller proportion of the amount remaining in this industry, after eliminating the cost of stock, was devoted to wages in 1900 than in 1899, leaving a larger amount for the payment of expenses (other than wages and stock) and for profit, and this amount formed a larger percentage of the total capital invested in the industry in 1900 than in 1899.

A similar comparison for Carpetings follows:

Carpetings. [Comparison for 12 Establishments.]

Classification.	1899	1900
Amount of capital invested,	$6,612,557	$6,546,465
Value of goods made and work done (gross product),	$7,136,878	$7,762,492
Value of stock used and other materials consumed in production,	$4,187,029	$4,744,696
Industry product (gross product less value of stock and materials),	$2,949,849	$3,017,796
Wages (labor's direct share of product),	$1,650,257	$1,722,180
Profit and minor expense fund (industry product less wages),	$1,299,592	$1,295,616
Percentage of industry product paid in wages,	55.94	57.07
Percentage of industry product devoted to profit and minor expenses,	44.06	42.93
Percentage of profit and minor expense fund of capital invested,	19.65	19.79

The percentage of industry product paid in wages in this industry was 55.94 in 1899, and 57.07 in 1900; deducting wages, the fund devoted to profit and minor expenses fell from 44.06 in 1899 to 42.93 in 1900, and this fund formed practically the same percentage of the capital invested in 1900 as in 1899, being 19.65 in 1899 and 19.79 in 1900.

The next table presents a comparison for Cotton Goods.

Cotton Goods. [Comparison for 162 Establishments.]

Classification.	1899	1900
Amount of capital invested,	$127,908,334	$129,544,848
Value of goods made and work done (gross product),	$99,008,249	$125,494,899
Value of stock used and other materials consumed in production,	$50,956,971	$66,162,140

Cotton Goods. [Comparison for 162 Establishments] — Concluded.

Classification.	1899	1900
Industry product (gross product less value of stock and materials),	$48,051,278	$59,332,759
Wages (labor's direct share of product),	$29,927,858	$33,453,372
Profit and minor expense fund (industry product less wages),	$18,123,420	$25,879,387
Percentage of industry product paid in wages,	62.28	56.38
Percentage of industry product devoted to profit and minor expenses,	37.72	43.62
Percentage of profit and minor expense fund of capital invested,	14.17	19.98

In this industry, the percentage of industry product paid in wages fell from 62.28 in 1899 to 56.38 in 1900. Of course, the percentage of industry product devoted to profit and minor expenses correspondingly increased, being 43.62 in 1900 as against 37.72 in 1899. The profit and minor expense fund formed 14.17 per cent of capital invested in 1899, and 19.98 per cent in 1900.

The next table relates to Leather.

Leather. [Comparison for 90 Establishments.]

Classification.	1899	1900
Amount of capital invested,	$5,912,612	$6,143,081
Value of goods made and work done (gross product),	$19,848,590	$18,381,491
Value of stock used and other materials consumed in production,	$15,040,299	$13,905,787
Industry product (gross product less value of stock and materials),	$4,808,291	$4,475,704
Wages (labor's direct share of product),	$2,326,116	$2,327,200
Profit and minor expense fund (industry product less wages),	$2,482,175	$2,148,504
Percentage of industry product paid in wages,	48.38	52.00
Percentage of industry product devoted to profit and minor expenses,	51.62	48.00
Percentage of profit and minor expense fund of capital invested,	41.98	34.97

This industry, like Carpetings, shows an increase in the percentage of industry product paid in wages, the proportions rising from 48.38 per cent in 1899 to 52 per cent in 1900. The percentage of industry product devoted to profit and minor expenses shows a decrease, 51.62 in 1899 as against 48 in 1900, and the percentage which this fund formed of the capital invested fell from 41.98 in 1899 to 34.97 in 1900.

The next table presents a comparison for Machines and Machinery.

Machines and Machinery. [Comparison for 358 Establishments.]

Classification.	1899	1900
Amount of capital invested,	$38,758,110	$40,813,722
Value of goods made and work done (gross product),	$39,972,702	$50,833,138
Value of stock used and other materials consumed in production,	$14,924,194	$18,673,352
Industry product (gross product less value of stock and materials),	$25,048,508	$32,159,786
Wages (labor's direct share of product),	$13,364,375	$16,416,828
Profit and minor expense fund (industry product less wages),	$11,684,133	$15,742,958
Percentage of industry product paid in wages,	53.35	51.05
Percentage of industry product devoted to profit and minor expenses,	46.65	48.95
Percentage of profit and minor expense fund of capital invested,	30.15	38.57

The percentage of industry product paid in wages in this industry fell from 53.35 in 1899 to 51.05 in 1900, while the percentage of industry product devoted to profit and minor expenses rose from 46.65 in 1899 to 48.95 in 1900. An increase is also found in the percentage of profit and minor expense fund of capital invested, namely, 30.15 in 1899 as against 38.57 in 1900.

A comparison for Metals and Metallic Goods follows:

Metals and Metallic Goods. [Comparison for 374 Establishments.]

Classification.	1899	1900
Amount of capital invested,	$17,583,868	$17,676,413
Value of goods made and work done (gross product),	$28,349,404	$29,746,722
Value of stock used and other materials consumed in production,	$14,945,612	$15,297,738
Industry product (gross product less value of stock and materials),	$13,403,792	$14,448,984
Wages (labor's direct share of product),	$7,402,352	$7,755,689
Profit and minor expense fund (industry product less wages),	$6,001,440	$6,693,295
Percentage of industry product paid in wages,	55.23	53.68
Percentage of industry product devoted to profit and minor expenses,	44.77	46.32
Percentage of profit and minor expense fund of capital invested,	34.13	37.87

In this industry, the percentage of industry product paid in wages fell from 55.23 in 1899 to 53.68 in 1900, and the percentage of industry product devoted to profit and minor

expenses rose from 44.77 in 1899 to 46.32 in 1900. The percentage of profit and minor expense fund of capital invested rose from 34.13 in 1899 to 37.87 in 1900.

The facts for Paper are as follows:

Paper. [Comparison for 75 Establishments.]

Classification.	1899	1900
Amount of capital invested,	$20,499,173	$20,218,471
Value of goods made and work done (gross product),	$20,550,518	$21,491,529
Value of stock used and other materials consumed in production,	$11,302,055	$12,486,281
Industry product (gross product less value of stock and materials),	$9,248,463	$9,005,248
Wages (labor's direct share of product),	$3,811,939	$3,778,900
Profit and minor expense fund (industry product less wages),	$5,436,524	$5,226,348
Percentage of industry product paid in wages,	41.22	41.96
Percentage of industry product devoted to profit and minor expenses,	58.78	58.04
Percentage of profit and minor expense fund of capital invested,	26.52	25.85

In this industry, the percentage of industry product paid in wages shows slight change, it being 41.22 in 1899 and 41.96 in 1900. Its complement, therefore, the percentage of industry product devoted to profit and minor expenses, is also similar for the two years, 58.78 in 1899 and 58.04 in 1900. The percentage which the profit and minor expense fund formed of capital invested was 26.52 in 1899 and 25.85 in 1900.

The next table relates to Woollen Goods.

Woollen Goods. [Comparison for 140 Establishments.]

Classification.	1899	1900
Amount of capital invested,	$27,252,551	$24,673,165
Value of goods made and work done (gross product),	$32,074,688	$38,001,317
Value of stock used and other materials consumed in production,	$18,424,789	$21,898,179
Industry product (gross product less value of stock and materials),	$13,649,899	$16,103,138
Wages (labor's direct share of product),	$6,968,819	$8,004,814
Profit and minor expense fund (industry product less wages),	$6,681,080	$8,098,324
Percentage of industry product paid in wages,	51.05	49.71
Percentage of industry product devoted to profit and minor expenses,	48.95	50.29
Percentage of profit and minor expense fund of capital invested,	24.52	32.82

In this industry, a falling off is noted in the percentage of industry product paid in wages, the decline being from 51.05 in 1899 to 49.71 in 1900, matched by a corresponding increase in the percentage of industry product devoted to profit and minor expenses, which rose from 48.95 in 1899 to 50.29 in 1900. The percentage which the profit and minor expense fund formed of capital invested also shows an increase, rising from 24.52 in 1899 to 32.82 in 1900.

The final table relates to Worsted Goods.

Worsted Goods. [Comparison for 34 Establishments.]

Classification.	1899	1900
Amount of capital invested,	$17,980,205	$15,829,430
Value of goods made and work done (gross product),	$34,220,442	$32,173,495
Value of stock used and other materials consumed in production,	$19,549,806	$19,377,717
Industry product (gross product less value of stock and materials),	$14,670,636	$12,795,778
Wages (labor's direct share of product),	$5,480,110	$5,459,841
Profit and minor expense fund (industry product less wages),	$9,190,526	$7,335,937
Percentage of industry product paid in wages,	37.35	42.67
Percentage of industry product devoted to profit and minor expenses,	62.65	57.33
Percentage of profit and minor expense fund of capital invested,	51.11	46.34

In this industry, an increase in the percentage of industry product paid in wages is found, 37.35 in 1899 and 42.67 in 1900. The percentage of industry product devoted to profit and minor expenses decreased from 62.65 in 1899 to 57.33 in 1900, and the percentage the profit and minor expense fund formed of capital invested fell from 51.11 in 1899 to 46.34 in 1900.

Condensed Statements.

On the basis of the reports made by the 4,645 representative establishments, the following condensed general statements may be made regarding the manufacturing and mechanical industries in the Commonwealth for the years 1899 and 1900:

Capital Invested.

The increase in capital devoted to production in 1900 as compared with 1899 in All Industries amounted to 1.78 per cent. This increase does not necessarily imply an investment of more money in industrial enterprises, nor, on the other hand, does a decrease imply the withdrawal of capital, since there are various elements by which it is affected. For example, a small amount of stock on hand or in process of manufacture at the time the return is made would have its effect in showing diminished capitalization, without, of course, affecting the condition of the industry; and, on the other hand, an investment in stock purchased in a favorable market, the same being held at the time of making the return, would render the amount of capital invested relatively larger than would be found at a time when the stock on hand was comparatively light.

Concerning the nine leading industries, the following facts appear: Cotton Goods shows an increase in capital invested of 1.28 per cent; Leather, 3.90 per cent; Machines and Machinery, 5.30 per cent; and Metals and Metallic Goods, 0.53 per cent. A decrease in amount of capital is shown in Boots and Shoes of 1.72 per cent; Carpetings, 1.00 per cent; Paper, 1.37 per cent; Woollen Goods, 9.46 per cent; and Worsted Goods, 11.96 per cent. The aggregate for the nine leading industries exhibits a decrease of 0.53 per cent.

Stock Used.

Considered in the aggregate, the value of stock used in All Industries in 1900 shows an increase of 8.57 per cent as compared with 1899. Boots and Shoes shows an increase of 0.17

per cent; Carpetings, 13.32 per cent; Cotton Goods, 29.84 per cent; Machines and Machinery, 25.12 per cent; Metals and Metallic Goods, 2.36 per cent; Paper, 10.48 per cent; and Woollen Goods, 18.85 per cent. Leather and Worsted Goods show percentages of decrease of 7.54 and 0.88, respectively. The increase in the value of stock used in the nine leading industries in the aggregate was 10.15 per cent.

Goods Made.

The aggregate value of goods made and work done in All Industries in 1900 as compared with 1899 shows an increase of 8.51 per cent. In seven of the nine leading industries percentages of increase are shown as follows: Boots and Shoes, 1.38; Carpetings, 8.77; Cotton Goods, 26.75; Machines and Machinery, 27.17; Metals and Metallic Goods, 4.93; Paper, 4.58; and Woollen Goods, 18.48. Leather shows a decrease of 7.39 per cent and Worsted Goods of 5.98 per cent. The aggregate increase for the nine leading industries was 10.89 per cent.

The value of goods made and work done in the 4,645 establishments considered, in 1900, was $799,353,677. Of this amount, 30.91 per cent was produced in establishments controlled by private firms, 60.26 per cent in establishments controlled by corporations, and 8.83 per cent in establishments controlled by industrial combinations.

Persons Employed.

The increase in the average number of persons employed in All Industries in 1900 as compared with 1899 was 3.77 per cent. An increase is also shown in the smallest number of persons employed of 1.83 per cent; while the number of persons employed at periods of employment of the greatest number shows an increase of 3.35 per cent, with a range of unemployment wider in 1900 than in 1899 by 8,398 persons, or 7.73 per cent. In six of the leading industries an increase in the aver-

age number of persons employed appears, the percentages being as follows: Boots and Shoes, 0.73; Carpetings, 2.20; Cotton Goods, 2.71; Machines and Machinery, 20.99; Metals and Metallic Goods, 3.52; and Woollen Goods, 7.97. In the other three industries decreases are shown, the percentages being: Leather, 3.07; Paper, 0.24; and Worsted Goods, 2.94. The average number of males employed in All Industries increased 4.69 per cent, and females 1.95 per cent.

Of the aggregate number of persons employed, 29.40 per cent were employed by private firms, 64.58 per cent by corporations and 6.02 per cent by industrial combinations.

Wages Paid.

The total amount paid in wages in the 4,645 establishments increased 6.67 per cent in 1900 as compared with 1899. In six of the nine leading industries the following percentages of increase appear: Carpetings, 4.36; Cotton Goods, 11.78; Leather, 0.05; Machines and Machinery, 22.84; Metals and Metallic Goods, 4.77; and Woollen Goods, 14.87. In the other three industries the following percentages of decrease appear: Boots and Shoes, 0.62; Paper, 0.87; and Worsted Goods, 0.37. Of the aggregate amount paid in wages, 31.36 per cent was disbursed by private firms, 63.13 per cent by corporations, and 5.51 per cent by industrial combinations.

Average Yearly Earnings.

The average yearly earnings per individual, without regard to sex or age, was $427.60 in 1899, and $439.57 in 1900, an increase of $11.97, or 2.80 per cent in the latter year. The range from highest to lowest average, in 1900, was from $818.65 in Liquors (Malt) to $323.59 in Flax, Hemp, and Jute Goods. The higher earnings rule in the industries demanding greater skill and employing males chiefly, and the lower in factory industries employing a large proportion of females and young persons. The estimated average amount earned during 1900 by adult males is $530.82; adult females, $334.70; and young persons, $228.33.

Working Time and Proportion of Business Done.

Each of the employés worked on an average 294.15 days in 1899 and 290.43 days in 1900, a decrease of 3.72 days, or 1.26 per cent. The average proportion of business done reached 66.82 per cent in 1899 and 66.65 per cent in 1900 of the full productive capacity of the 4,645 establishments, a decrease in the latter year of 0.25 per cent.

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